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SAMDIST: A Computer Code for Calculating Statistical Distributions for R-Matrix Resonance Parameters

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SAMDIST: A COMPUTER CODE FOR CALCULATING STATISTICAL DISTRIBUTIONS FOR R-MATRIX RESONANCE PARAMETERS

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ABSTRACT

The SAMDIST computer code has been developed to calculate distribution of resonance parameters of the Reich-Moore R-matrix type. The program assumes the parameters are in the format compatible with that of the multilevel R-matrix code SAMMY.

SAMDIST calculates the energy-level spacing distribution, the resonance width distribution, and the long-range correlation of the energy levels. Results of these calculations are presented in both graphic and tabular forms.

1. INTRODUCTION

The existence of statistical distributions for **R-matrix resonance** parameters has important implications for data **analyses in** both the resolved and the unresolved energy regions. In the resolved energy region, an evaluator may encounter diiculties in obtaining a set of resonance parameters that fit simultaneously various'sets of experimental data. The most common source of these difficulties is the broadening of the data due to finite experimental resolution; this broadening may preclude the identification of some smallresonance levels. In such a case, the known **statistical distributions** of the resonance **parameters can** be used to provide guidance for the location and the magnitudes of missing levels in the resonance set. In the unresolved energy region, the statistical distributions of the resonance parameters can be used to generate average cross sections.

The purpose of this work is to describe a tool, the code SAMDIST, which can be used in conjunction with a cross-section evaluation code such as **SAMMY**[1] to verify the consistency of a resonance parameter set with the predicted theoretical statistical distribution.

The SAMDIST code has been designed for calculating distributions of resonance parameters of the Reich-Moore R-matrix type. The program accommodates resonance parameters in a format compatible with that of the SAMMY code. SAMDIST calculates distributions of the resonance parameters and compares them with theoretical predictions; results of those calculations are given in graphic and tabular forms. Average values and standard deviations are also given. A listing of the SAMDIST program is given in Appendix A.

The following tasks can be performed with the SAMDIST code:

1. Level spacing distributions may be determined according to the Wigner distribution law.
2. Distributions may be calculated for all widths, including neutron width, radiation width, and fission width (usually two channels in the Reich-Moore formalism). Values for each of these widths are distributed according to a χ^2 distribution with the appropriate number of degrees of freedom.
3. Long-range correlations of the energies can be tested via the A, statistic test of Mehta-Dyson.

2. BRIEF OVERVIEW OF THE THEORETICAL DISTRIBUTIONS OF THE RESONANCE PARAMETERS

2.1 LEVEL SPACING DISTRIBUTION LAW

The spacing between two consecutive resonance energies for the same total angular momentum and parity exhibits random behavior. For a set of n resonance energy levels, E_1, E_2,..., E_n, where the level spacing between two consecutive energies, E_k and E_{k-1}, is D_k, and the average level spacing is $<D>$, the probability distribution function predicted by the Wigner law[2] is

$$p(x)\ dx = \frac{\pi x}{2}\ \exp(-\frac{\pi x^2}{4})\ dx, \tag{1}$$

where $x = D_k/<D>$, and $<D>$ is the average level spacing. The Wigner probability distribution function has the following property:

$$\int_0^\infty p(x)\ dx = \int_0^\infty x p(x) dx = 1\ . \tag{2}$$

The second moment of the Wigner distribution is given by

$$\overline{x^2} = \int_0^\infty x^2 p(x) dx = \frac{4}{\pi}\ . \tag{3}$$

Equation (1) was the first mathematical prediction of the level spacing distribution to provide excellent agreement with experimental results; it has triggered a series of investigations on the-subject of the statistical distribution of resonance parameters. Although other accurate level spacing distributions have been proposed, Wigner's law is the most widely used and is suitable for practical applications.

2.2 RESONANCE WIDTH DISTRIBUTION LAW

Systematic measurements of the resonance widths show strong fluctuations among resonances of the same angular momentum and parity. The definition of resonance width involves two other quantities, namely the reduced widths, $\gamma_{\lambda c}$, and the penetration factor, P_c, which are related according to the equation

$$\Gamma_\lambda = \sum_c (2 P_c)\ \gamma_{\lambda c}^2\ , \tag{4}$$

where λ refers to the energy levels in the compound nucleus and c refers to the particle channel. One should expect that the fluctuations are connected to either the reduced widths, $\gamma_{\lambda c}$, or to the penetration factors, P_c. However, it is improbable that the fluctuations are due to the penetration factors since they are smooth functions of energy. Therefore, the-observed fluctuations are caused by the reduced widths, $\gamma_{\lambda c}$; these, in turn are related **to the** projection of the **eigenfunctions** of the Hamiltonian of the compound nucleus on the nuclear surface. This projection involves an integration of many uncorrelated contributions, positive and negative, over the high-dimensional phase space of the compound nucleus. It then follows **from** the central limit theorem that the distributions of $\gamma^2_{\lambda c}$ have a Gaussian distribution with zero-mean. Therefore, the distribution function of the reduced widths can be written as

$$P(\gamma_{\lambda c})\ d\gamma_{\lambda c} = \frac{1}{\sqrt{2\pi <\gamma^2_{\lambda c}>}}\ \exp(-\frac{\gamma^2_{\lambda c}}{2<\gamma^2_{\lambda c}>})\ d\gamma_{\lambda c}\ , \tag{5}$$

where $<\gamma^2_{\lambda c}>$ is the average value of $\gamma^2_{\lambda c}$.

The **probability** distribution function of the resonance widths, Γ_λ, can be derived from Eq. (3) as follows: The statistical theorem states that ify is a variable that is the sum of squares of v normally distributed zero-mean independent variables, then y is distributed according to a χ^2 distribution with v degrees of freedom. Therefore, the distribution of Γ_λ is

$$p_\nu(x)\ dx = \frac{\nu}{2\,G(\nu/2)}\ (\nu x/2)^{\frac{\nu}{2}-1}\ \exp(-\nu x/2)\, dx\ , \tag{6}$$

wherex = $\Gamma_\lambda/<\Gamma>$, G($\nu/2$) **is** the mathematical gamma function, and $<\Gamma>$ is the average value of the width taken over a given energy range. For v = 1, Eq. (6) is well known as the **Porter-**Thomas[3] distribution law of the neutron width. It is generally accepted that fission is a few-channel process, and that there are only a limited number of effectively open channels; 2 or 3 degrees of **freedom** (v = 2 or v = 3)are usually assumed in the fission width distribution. In the neutron capture event, a large number of capture channels are opened; the gamma width distribution is represented by a χ^2 distribution with a large number of degrees of **freedom** (v-w) **,which** corresponds to a **Dirac-**delta function centered at $\Gamma_\gamma = <\Gamma>$.

The χ^2 distribution function has the following property:

$$\int_0^\infty p_\nu(x)\ dx = \int_0^\infty x p_\nu(x)\ dx = 1. \tag{7}$$

The second moment of a χ^2 distribution with v degrees of freedom is given as

$$\overline{x^2} = \int_0^\infty x^2 p_\nu(x)\, dx = \frac{2}{\nu} + 1 . \tag{8}$$

2.3 DYSON AND MEHTA LONG-RANGE CORRELATION OF Δ_3 STATISTICS TEST

Another useful tool for evaluating nuclear data is the Δ_3 statistics test introduced by Dyson and Mehta.[4] The Δ_3 test provides a measure of the mean-square deviation between the number of observed energy levels in the energy interval E_i to E_f and the best fit to the straight line, as a function of energy, given as $aE + b$. Strictly speaking, the definition is

$$\Delta_3 = \underset{(a,b)}{Min} \left| \frac{1}{2L} \int_{E_i}^{E_f} (N(E) - aE - b)^2\, dE \right| , \tag{9}$$

where $N(E)$ is the corresponding cumulative number of energy levels as a function of energy.

The Dyson and Mehta Δ_3 test predicts that the theoretical average value $<\Delta_3>$ is given as

$$<\Delta_3> = \frac{1}{\pi^2} [\ln(n) - 0.06871, \tag{10}$$

with variance $V_{\Delta_3} = 1.169/\pi^4$. Here n is the number of energy levels observed in the interval E_i to E_f

For practical applications, the coefficients a and b in Eq. (9) are determined according to the following conditions:

$$\frac{\partial \Delta_3}{\partial a} = 0 , \tag{11}$$

and

$$\frac{\partial \Delta_3}{\partial b} = 0. \tag{12}$$

These conditions lead to the following equations:

$$a\int_{E_i}^{E_f} E^2\, dE + b\int_{E_i}^{E_f} E\, dE = \int_{E_i}^{E_f} N(E)\, dE, \tag{13}$$

and

$$a\int_{E_i}^{E_f} E\, dE + b\int_{E_i}^{E_f} dE = \int_{E_i}^{E_f} N(E)\, dE\ . \tag{14}$$

The following identities will be used in evaluating a and b:

$$\int_{E_i}^{E_f} dE = E_f - E_i, \tag{15}$$

$$\int_{E_i}^{E_f} E\, dE = (E_f^2 - E_i^2)/2\ , \tag{16}$$

and

$$\int_{E_i}^{E_f} E^2\, dE = (E_f^3 - E_i^3)/3\ . \tag{17}$$

If the energy levels in the range E_i to E_f are numbered from $l = -L$ to $l = +L$, then the following relations also hold:

$$\int_{E_i}^{E_f} N(E)\, dE = \sum_{l=-L}^{+L} \int_{E_l}^{E_{l+1}} l\, dE = \sum_{l=-L}^{+L} l\ (E_{l+1} - E_l)\ , \tag{18}$$

$$\int_{E_i}^{E_f} N(E)\,E\,dE = \sum_{l=-L}^{+L} \int_{E_l}^{E_{l+1}} l\,E\,dE = \sum_{l=-L}^{+L} l\,(E_{l+1}^2 - E_l^2)/2\,, \tag{19}$$

and

$$\int_{E_i}^{E_f} N^2(E)\,E\,dE = \sum_{l=-L}^{+L} l^2\,(E_{l+1} - E_l)\,. \tag{20}$$

The system of Eqs. (13) and (14) can be written as

$$\alpha_1 a + \beta_1 b = \gamma_1 \tag{21}$$

and

$$\alpha_2 a + \beta_2 b = \gamma_2\,, \tag{22}$$

in which the Greek symbols are defined as

$$\int_{E_i}^{E_f} E\,dE = (E_f^2 - E_i^2)/2\,, \text{ and} \tag{23}$$

$$\alpha_2 = \beta_1 = (E_f^2 - E_i^2)/2\,, \tag{24}$$

$$\beta_2 = E_f - E_i\,, \tag{25}$$

$$\gamma_1 = \sum_l l\,(E_{l+1}^2 - E_l^2)/2\,, \tag{26}$$

and

$$\gamma_2 = \sum_l l(E_{l+1} - E_l) \ . \tag{27}$$

The solution for a and b is then

$$a = \frac{\gamma_1 - \gamma_2 \beta_1/\beta_2}{\alpha_1 - \alpha_2 \beta_1/\beta_2}, \tag{28}$$

and

$$b = \frac{\gamma_2}{\beta_2} - \frac{\alpha_2}{\beta_2} \frac{\gamma_1 - \gamma_2 \beta_1/\beta_2}{\alpha_1 - \alpha_2 \beta_1/\beta_2} \ . \tag{29}$$

Substituting these definitions into Eq. (9) leads to the expression for the A, test:

$$\Delta_3 = \frac{1}{E_f - E_i} \left\{ \int_{E_i}^{E_f} N^2(E)\, dE - \gamma_1 a - \gamma_2 b \right\}, \tag{30}$$

or

$$\Delta_3 = \frac{1}{E_f - E_i} \left\{ \sum_{-L}^{+L} l^2 (E_{l+1} - E_l) - \gamma_1 a - \gamma_2 b \right\}, \tag{31}$$

where a and b are given by Eqs. (28) and (29), and γ_1 and γ_2 by Eqs. (26) and (27).

3. SAMPLING PROCEDURE

3.1. FIRST AND SECOND MOMENTS, VARIANCE AND STANDARD DEVIATION

The statistical sampling of the experimental data, such as the energy level spacing, the resonance width, etc., are carried out following the usual procedure applied in statistics. For a number n of random variables $(x_1, x_2, \ldots, x_n)$ selected according to a probability distribution function, $f(x)$, the estimation of the first moment, $\bar{x}$, also referred to as the mean, is given by

$$\bar{x} = \frac{1}{n} \sum_{i=1}^{n} x_i \ . \tag{32}$$

Similarly, the second moment is given by

$$\overline{x^2} = \frac{1}{n} \sum_{i=1}^{n} x_i^2 \ . \tag{33}$$

The dispersion of the x_i with respect to $\bar{x}$ is defined as

$$\sigma_{x_i}^2 = \frac{1}{n-1} \sum_{i=1}^{n} \left(x_i - \bar{x}\right)^2 \ . \tag{34}$$

The variance of $\bar{x}$ is given by

$$\sigma_{\bar{x}}^2 = \frac{1}{n} \sigma_{x_i}^2 \tag{35}$$

or

$$\sigma_{\bar{x}}^2 = \frac{1}{n(n-1)} \sum_{i=1}^{n} \left(x_i - \bar{x}\right)^2 \ , \tag{36}$$

whereas the standard deviation, s, is given by

$$s = \sqrt{\sigma_{\bar{x}}^2} \ . \tag{37}$$

3.2. DATA HISTOGRAM REPRESENTATION

The histogram distribution of the n samples are obtained according to the following steps:[5]

1. The set of random variables $(x_1, x_2, \ldots, x_n)$ are ordered such that $x_i < x_{i+1}$.

2. For a user-defined bin width, δx, the number of intervals, ni, is determined as

$$ni = \frac{x_n}{\delta x} \quad . \tag{38}$$

3. The random variables $(x_1, x_2, \ldots, x_n)$ are sampled to determine the frequency in which x_i, for $i = 1, \ldots, n$, falls in the interval between $(k-1)\delta x$ and $k\delta x$, where $k = 1, \ldots, ni$.

4. To calculate the probability p_k of finding $x \in (x_1, x_2, \ldots, x_n)$ in the k^{th} interval between $(k-1)\delta x$ and $k\delta x$, and the corresponding variance σ_k^2, and consequently the standard deviation s, we note that each event in the k^{th} interval adds to a success, such as

$$\xi_{ik} = \begin{cases} 1 & \text{event in the } k^{th} \text{ interval} (i \in k) \\ 0 & \text{otherwise} (i \notin k) \end{cases} \tag{39}$$

Therefore; the probability, p_k, is

$$p_k = p((k-1)\delta x < x < k\delta x) = \frac{1}{n}\sum_{i=1}^{n} \xi_{ik} , \tag{40}$$

or

$$p_k = \frac{ki}{n} , \tag{41}$$

where ki is the number of samples falling into the k^{th} interval.

The variance σ_k^2 is given by

$$\sigma_k^2 = \frac{1}{n(n-1)} \sum_{i=1}^{n} \left(\xi_{ik} - p_k\right)^2 \tag{42}$$

or

$$\sigma_k^2 = \frac{1}{(n-1)} p_k (1 - p_k) \;, \tag{43}$$

and the standard deviation, s , is given as

$$s = \sqrt{\frac{1}{(n-1)} p_k (1 - p_k)} \;. \tag{44}$$

4. RUNNING SAMDIST

The SAMDIST program is written in FORTRAN77 on a RISC-6000 UNIX-based system. The input to SAMDIST is constructed by answering various prompts that ask for the type of the distribution, the name of the resonance parameters in the SAMMY format, the energy range in which the calculations are to be performed, etc. Two output files are produced as the result of a SAMDIST run: one of them is in ASCII format, named samdist.avg, while the other is in the FORODF format,[6] named samdist.odf, which, in turn, can be displayed in graphic form. To illustrate the procedure to execute the SAMDIST program, the ^{235}U s-wave resonance parameters' are used. These represent the cross sections in the energy range from 0 to 500 eV and are stored in the file 0to500.par. Two resonance spin groups are in the resonance parameter sets; these groups are specified by the numbers in the last columns of the file in the SAMMY format (for which a listing is displayed in Appendix B). In the following examples, the resonance parameter distributions are taken for the entire energy range from 0 to 500 eV. To distinguish program prompts from reply, the prompts'are given in boldface letters.

a. Level-spacing distribution for spin group 1

samdist
Type d (for spacing), w (for width), or d3 (for delta3)
d
Parameter file name
0to500.par
Spin group, initial and final energies
1,0.0,500.0
Bin width for sampling
0.2

b. Level-spacing distribution for spin group 2

samdist
Type d (for spacing), w (for width), or d3 (for delta3)
d
Parameter file name
0to500.par
Spin group, initial and final energies
2,0.0,500.0
Bin width for sampling
0.2

c. Reduced neutron-width distribution for spin group 1

samdist
Type d (for spacing), w (for width), or d3 (for delta3)
w
Parameter file name
0to500.par
Particle channel
neutron
Spin group, initial and final energies
1,0.0,500.0
Bin width for sampling
1.0
Degrees of freedom
1

d. Reduced neutron-width distribution for spin group 2

samdist
Type d (for spacing), w (for width), or d3 (for delta3)
w
Parameter file name
0to500.par
Particle channel
neutron
Spin group, initial and final energies
2,0.0,500.0
Bin width for sampling
1.0
Degrees of freedom
1

e. Fission-width distribution for spin group 1

samdist
Type d (for spacing), w (for width), or d3 (for delta3)
w
Parameter file name
0to500.par
Particle channel
fission
Spin group, initial and final energies
1,0.0,500.0

Bin width for sampling
1.0
Degrees of freedom
4

f. Fission-width distribution for spin group 2

samdist
Type d (for spacing), w (for width), or d3 (for delta3)
w
Parameter file name
0to500.par
Particle channel
fission
Spin group, initial and final energies
2,0.0,500.0
Bin width for sampling
1.0
Degrees of freedom
4

g. Δ_3 statistic test for spin group 1

samdist
Type d (for spacing), w (for width), or d3 (for delta3)
d3
Parameter file name
0to500.par
Spin group, initial and final energies
1,0.0,500.0

h. Δ_3 statistic test for spin group 2

samdist
Type d (for spacing), w (for width), or d3 (for delta3)
d3
Parameter file name
0to500.par
Spin group, initial and final energies
2,0.0,500.0

5. SAMDIST OUTPUT

Two output files, named **samdist.avg** and **samdist.odf**, are generated by a **SAMDIST** run. The samdist.avg output is in the BCD format, whereas the samdist.odf file is the graphic form of the statistical distribution, both of which were originated with the FORODF **program.**[6] Description of the FORODF program can be found in **ref.** 6. However, for completeness the FORODF statements used to generate the graphics shown here will be presented. The ASCII output contains average values calculated over the statistical distribution of the resonance parameters along with the standard deviations. The results of the calculations for the theoretical prediction are also provided. In addition to the average values and the standard deviations, the sampling distribution of the sampled variables is also given. It is the sampling distribution that is given in graphical form in the samdist.odf file. To illustrate the results of a SAMDIST calculation, the output obtained for each of the inputs described in the previous section (inputs a to **f)** will be shown here. Recall that the data are ^{235}U s-wave resonance parameters of a SAMMY evaluation covering the energy range 0 to 500 **eV**.

a. **Level-spacing** distribution for **spin group** 1

The output created in this run is shown in Table 1, with the corresponding graphic output in Fig. 1. The FORODF sequence of statements used for generating the plot given in Fig. 1 is the following:

dvt/hist /err3 **/nodash** fl **s2se0ee4,/noerr** /dash 0.2 fl **s4**

A complete explanation of the previous command is given in the FORODF manual. However, a brief description of each switch used in this command is as follows:

dvt is used to obtain the plot in the screen. It varies according to the hind of graphic device being used;

/hist indicates to FORODF that the data will displayed in the form of histogram;

/err3 indicates that the standard deviations of the sampled variables, given by the vertical bars in the pictures, are in the position 3 in the FORODF file;

f1s2se0ee4 indicates that the x variable is stored in the position 1 and the theoretical distribution of x, p(x) is in the position 2; **se0ee4** indicates that x will span from 0 to 4;

/noerr indicates to turn off the /err3 switch;

/dash 0.2 indicates that the line will be dashed for **differentiation** purposes. The user may need to trigger this switch off for the next plot;

f1s4 indicates that the x variable is stored in the -position 1 and the experimental results is in the position 4.

Table 1. Nearest-neighbor-spacing **distribution for** J = 3

```
< d > =  1.4063E+00 std= 3.89453-02
number of levels'=  355
no. of levels in each interval of   0.2000E+00
 11  26  44  54  60  56  34  21  21  12
  4    7    41
```

Sampling	Interval		Calculated	sdt	Theory
0.0000E+00	-	0.2000E+00	0.3099E-01	0.9210E-02	0.3093E-01
0.2000E+00	-	0.4000E+00	0-73243-01	0.13853-01	0.8716E-01
0.4000E+00	-	0.6000E+00	0.1239E+00	0.1751E-01	0.1282E+00
0.6000E+00	-	0.8000E+00	0.1521E+00	0.1909E-01	0.1488E+00
0.8000E+00	-	0.1000E+01	0.1690E+00	0.19923-01	0.1490E+00
0.1000E+01	-	0.1200E+01	0.1577E+00	0.1937E-01	0.1332E+00
0.1200E+01	-	0.1400E+01	0.9577E-01	0.15643-01	0.1082E+00
0.1400E+01	-	0.1600E+01	0.59153-01	0.1254E-01	0.8061E-01
0.1600E+01	-	0.1800E+01	0.59153-01	0.1254E-01	0.554-13-01
0.1800E+01	-	0.2000E+01	0.33803-01	0.96053-02	0.3528E-01
0.2000E+01	-	0.2200E+01	0.1127E-01	0 .5610E-02	0.2087E-01
0.2200E+01	-	0.2400E+01	0.19723-01	0.73893-02	0.1149E-01
0.2400E+01	-	0.2600E+01	0.1127E-01	0.5610E-02	0.5901E-02

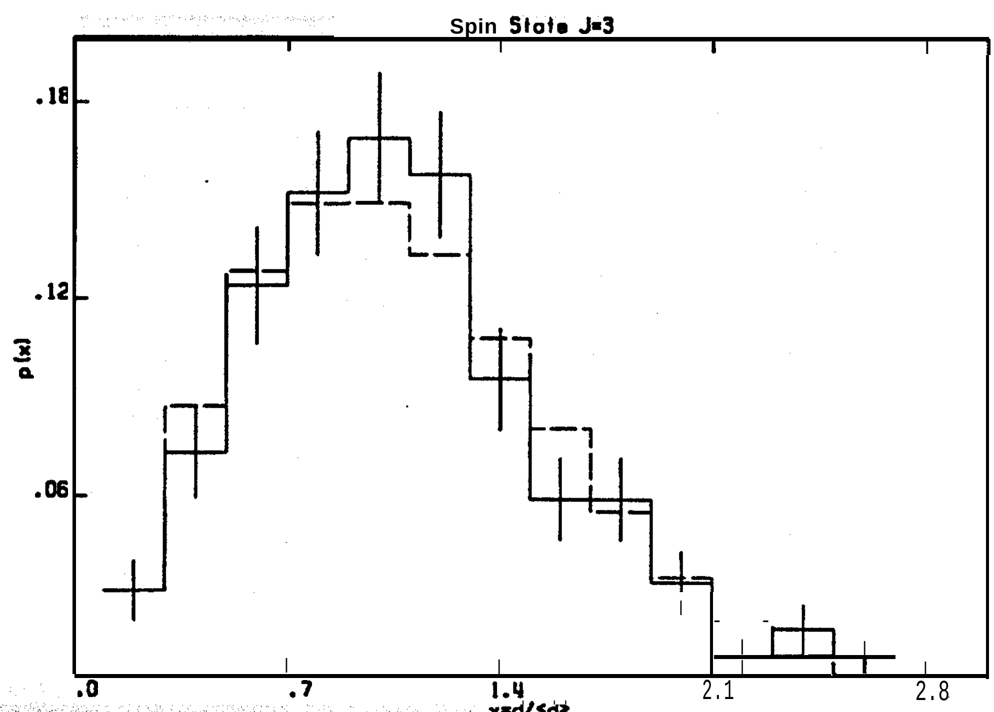

Fig. 1. Level spacing distribution for J = 3. Calculations (solid line) compared with Wigner distribution (dashed line).

The FORODF switch for plotting the other results is very similar to the one just described, and, therefore, it will not be described. For users who do not have FORODF, it will be worthwhile to use the ASCII results given in the **samdist.avg** and construct the graphic output using any available plotting capability,

b. Level-spacing distribution for **spin group** 2

The output created in this run is shown in Table 2. The corresponding graphic output is given in Fig. 2. The FORODF sequence of statements used for generating the plot given in Fig. 2 is the following:

dvt **/hist** /err3 **/nodash** fl **s2se0ee4,/noerr** /dash 0.2 fl **s4**

Table 2. Nearest-neighbor-spacing distribution for J = 4

```
 < d > =  9.09363-01 std= 1.78333-02
number of levels =  548
no. of levels in each interval of   0.2000E+00
 19  26  50  87  99  117  66  37  20  11
  9    2   310    0    0   1
```

Sampling interval			Calculated	sdt	Theory
0.0000E+00	-	0.2000E+00	0.34673-01	0-78223-02	0.30933-01
0.2000E+00	-	0.4000E+00	0-47453-01	0.90903-02	0.87163-01
0.4000E+00	-	0.6000E+00	0.91243-01	0.1231E-01	0.1282E+00
0.6000E+00	-	0.8000E+00	0.1588E+00	0.15633-01	0.1488E+00
0.8000E+00	-	0.1000E+01	0.1807E+00	0.16453-01	0.1490E+00
0.1000E+01	-	0.1200E+01	0.2135E+00	0.17523-01	0.1332E+00
0.1200E+01	-	0.1400E+01	0.1204E+00	0.13923-01	0.1082E+00
0.1400E+01	-	0.1600E+01	0.67523-01	0.1073E-01	0.8061E-01
0.1600E+01	-	0.1800E+01	0.36503-01	0.80183-02	0.55413-01
0.1800E+01	-	0.2000E+01	0.2007E-01	0.5997E-02	0.35283-01
0.2000E+01	-	0.2200E+01	0.16423-01	0-54343-02	0.20873-01
0.2200E+01	-	0.2400E+01	0-36503-02	0-25783-02	0.1149E-01
0.2400E+01	-	0.2600E+01	0-54743-02	0.31553-02	0.59013-02
0.2600E+01	-	0.2800E+01	0-18253-02	0.18253-02	0.28283-02
0.2800E+01	-	0.3000E+01	0.0000E+00	0.0000E+00	0.12663-02
0.3000E+01	-	0.3200E+01	0.0000E+00	0.0000E+00	0.52993-03
0.3200E+01	-	0.3400E+01	0.0000E+00	0.0000E+00	0.20753-03

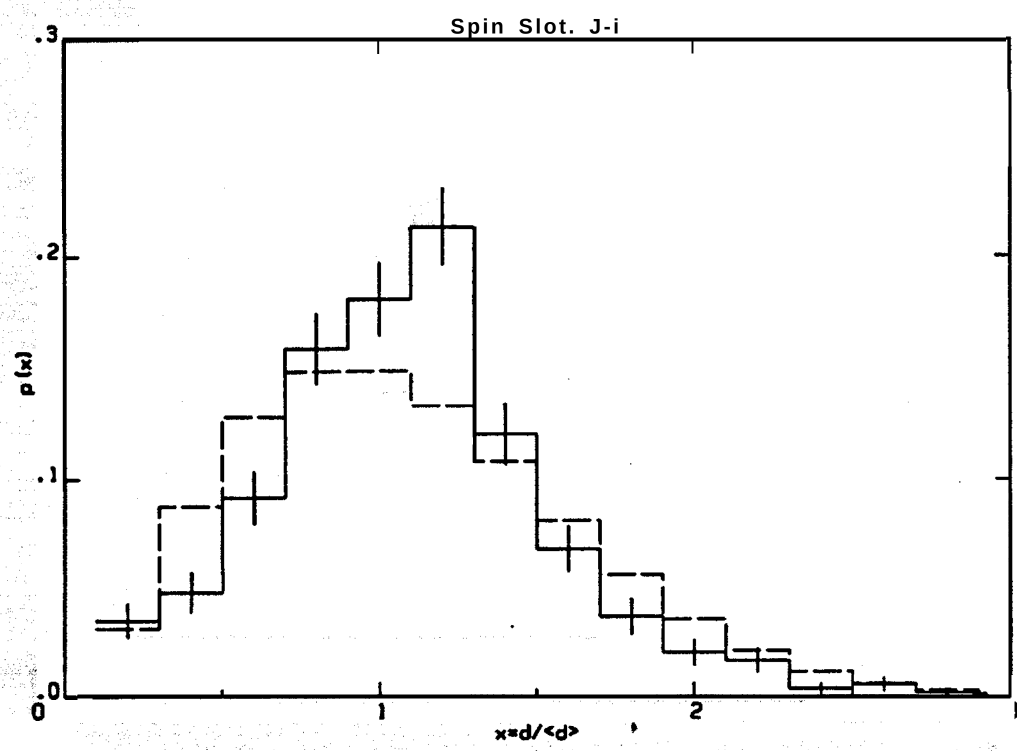

Fig. 2. **Level** spacing distribution for J = 4. Calculations (solid line) compared with Wigner distribution (dashed line).

c. <u>Reduced neutron-width distribution for **spin group** 1</u>

The output created in this run is shown in Table 3. The corresponding graphic output is given in Fig. 3. The FORODF sequence of statements used for generating the plot given in Fig. 3 is the following:

dvt **/hist** /err3 **/nodash f1s2se0ee8,/noerr** /dash 0.2 fls4

Table 3. Reduced neutron-width distribution for J = 3

< g n > = 1.2401E-01 std= 8.58193-03
number of levels = 355

no. of levels in each interval of 0.1000E+01
236 67 26 13 4 5 3 0 0 0
1

Sampling interval	Calculated	std	Theory
0.0000E+00 - 0.1000E+01	0.6648E+00	0.25093-01	0.6363E+00
0.1000E+01 - 0.2000E+01	0.1887E+00	0.2080E-01	0.1600E+00
0.2000E+01 - 0.3000E+01	0.73243-01	0.13853-01	0.74033-01
0.3000E+01 - 0.4000E+01	0-36623-01	0.99833-02	0-37763-01
0.4000E+01 - 0.5000E+01	0.1127E-01	0.56103-02	0.2015E-01
0.5000E+01 - 0.6000E+01	0.1408E-01	0-62633-02	0.1104E-01
0.6000E+01 - 0.7000E+01	0.84513-02	0-48653-02	0-61553-02
0.7000E+01 - 0.8000E+01	0.0000E+00	0.0000E+00	0-34733-02
0.8000E+01 - 0.9000E+01	0.0000E+00	0.0000E+00	0.19783-02
0.9000E+01 - 0.1000E+02	0.0000E+00	0.0000E+00	0.11343-02

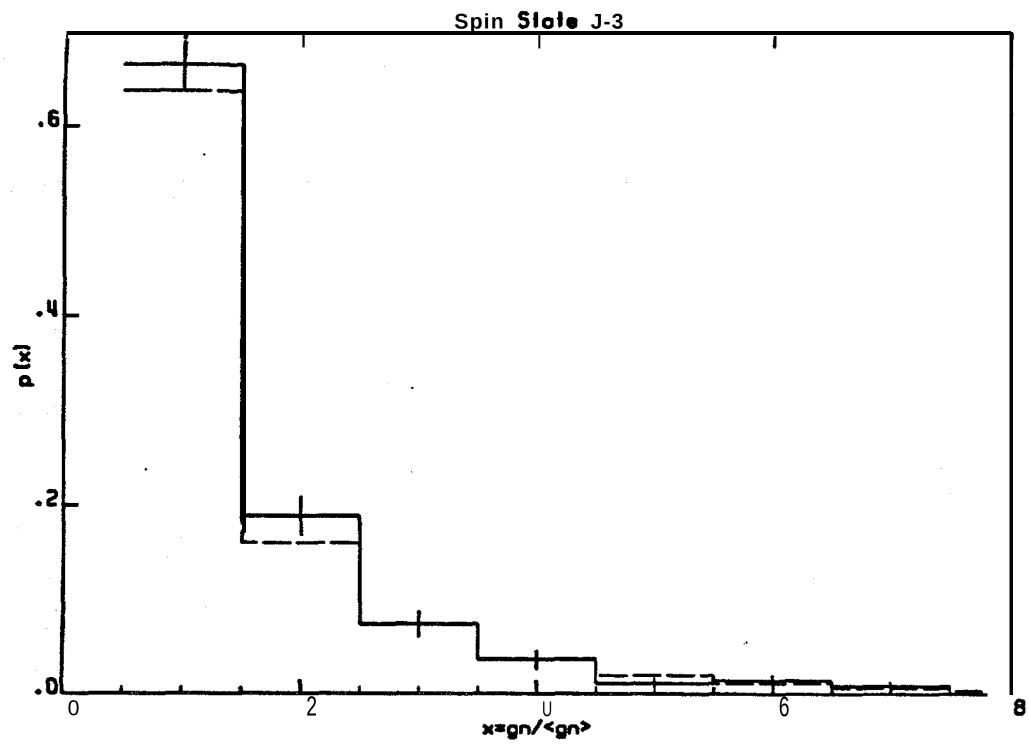

Fig. 3. Reduced neutron-width distribution for J = 3. Calculations (solid line) compared with Porter-Thomas distribution (dashed line).

d. Reduced neutron-width distribution for spin group 2

The output created in this run is shown in Table 4. The corresponding graphic output is given in Fig. 4. The FORODF sequence of statements used for generating the plot given in Fig. 4 is the **following**:

dvt **/hist** /err3 **/nodash f1s2se0ee8,/noerr** /dash 0.2 fls4

Table 4. Reduced neutron-width distribution for J = 4

```
< gn > =  g-30243-02 std= 5.67393-03
number of levels =  549
no. of levels in each interval of   0.1000E+01
372  77  41  33  14  6  3  2  0  0  1
```

Sampling interval			Calculated	std	Theory
0.0000E+00	-	0.1000E+01	0.6776E+00	0.19973-01	0.6363E+00
0.1000E+01	-	0.2000E+01	0.1403E+00	0.14833-01	0.1600E+00
0.2000E+01	--	0.3000E+01	0.7468E-01	0.1123E-01	0.7403E-01
0.3000E+01	-	0.4000E+01	0.6011E-01	0.1015E-01	0-37763-01
0.4000E+01	-	0.5000E+01	0.2550E-01	0-67343102	0.2015E-01
0.5000E+01	-	0 .6000E+01	0. 1093E-01	0.4441E-02	0.1104E-01
0.6000E+01	-	0.7000E+01	0.5464E-02	0.3149E-02	0.61553-02
0.7000E+01	-	0.8000E+01	0.3643E-02	0.2574E-02	0-34733-02
0.8000E+01	-	0.9000E+01	0.0000E+00	0.0000E+00	0. 1978E-02
0.9000E+01	-	0.1000E+02	0.0000E+00	0.0000E+00	0.11343-02

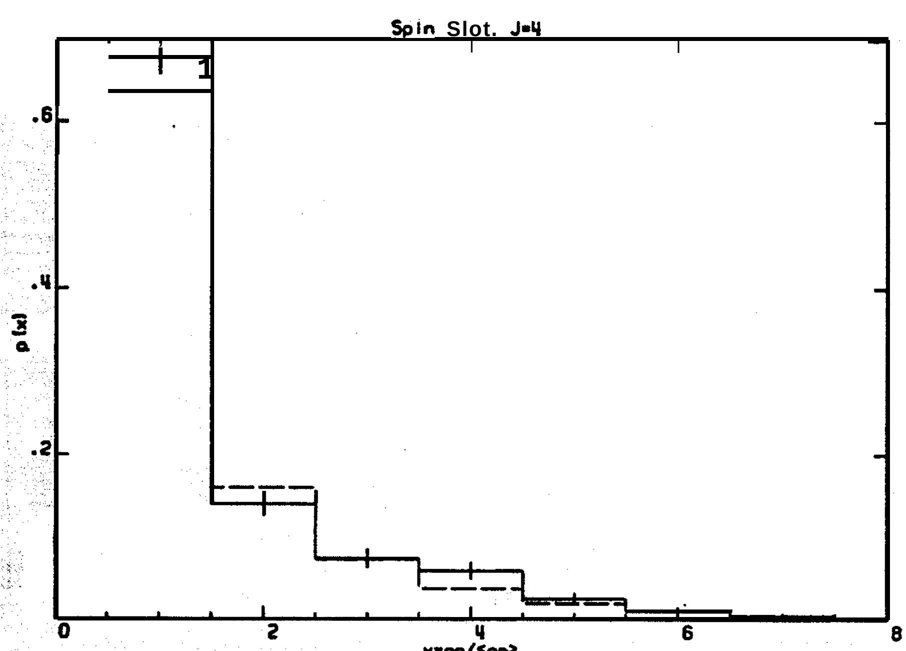

Fig. 4. Reduced neutron-width distribution for J = 4. Calculations (solid **line)** compared with Porter-Thomas distribution (dashed line).

e. Fission-width distribution for spin group 1

The output created in this run is shown in Table 5. The corresponding graphic output is given in Fig. 5. The FORODF sequence of statements used for generating the plot given in Fig. 5 is the following:

dvt /hist /err3 **/nodash f1s2se0ee8,/noerr** /dash 0.2 **f1s4**

Table 5. Fission-width distribution with 4 degrees of **freedom** for J = 3

```
< g f > =   2.5704E+02 std= 1.2391E+01
number of levels =  355
no. of levels in each interval of    0.1000E+01
223   85   36   7   3   0   1
```

Sampling interval			Calculated	std	Theory
0.0000E+00	-	0.1000E+01	0.6282E+00	0-25693-01	0.5940E+00
0.1000E+01	-	0.2000E+01	0.2394E+00	0.22683-01	0.3144E+00
0.2000E+01	-	0.3000E+01	0.1014E+00	0.1604E-01	0-74233-01
0.3000E+01	-	0.4000E+01	0.19723-01	0-73893-02	0.14333-01
0.4000E+01	-	0.5000E+01	0.84513-02	0-48653-02	0.25203-02
0.5000E+01	-	0.6000E+01	0.0000E+00	0.0000E+00	0-41953-03

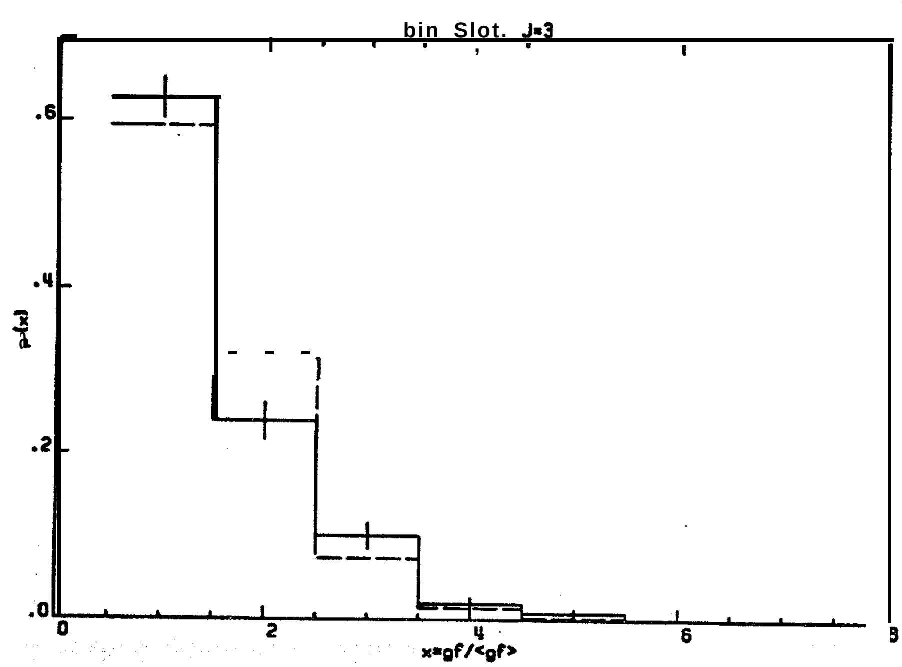

Fig. 5. Fission-width distribution for J = 3. Calculations (solid line) compared with χ^2 distribution with 4 degrees of **freedom** (dashed line).'

f. Fission-width distribution for spin group 2

The output created in this run is shown in Table 6. The corresponding graphic output is given in Fig. 6. The FORODF sequence of statements used for generating the plot given in Fig. 6 is the following:

dvt /hist /err3 /nodash fl s2se0ee8,/noerr /dash 0.2 fl s4

Table 6. Fission-width distribution with 4 degrees of freedom for J = 4

```
< gf > =  2.2689E+02 std= 9.6617E+00
number of levels =  549
no. of levels in each interval of   0.1000E+01
351  117  51  21  7  2
```

Sampling Interval			'Calculated	std	Theory
0.0000E+00	-	0.1000E+01	0.6393E+00	0.2051E-01	0.5940E+00
0.1000E+01	-	0.2000E+01	0.2131E+00	0.1749E-01	0. 3144E+00
0.2000E+01	-	0.3000E+01	0.92903-01	0.1240E-01	0.7423E-01
0.3000E+01	-	0.4000E+01	0.38253-01	0.81933-02	0.1433E-01
0.4000E+01	-	0.5000E+01	0.12753101	0.4793E-02	0.2520E-02

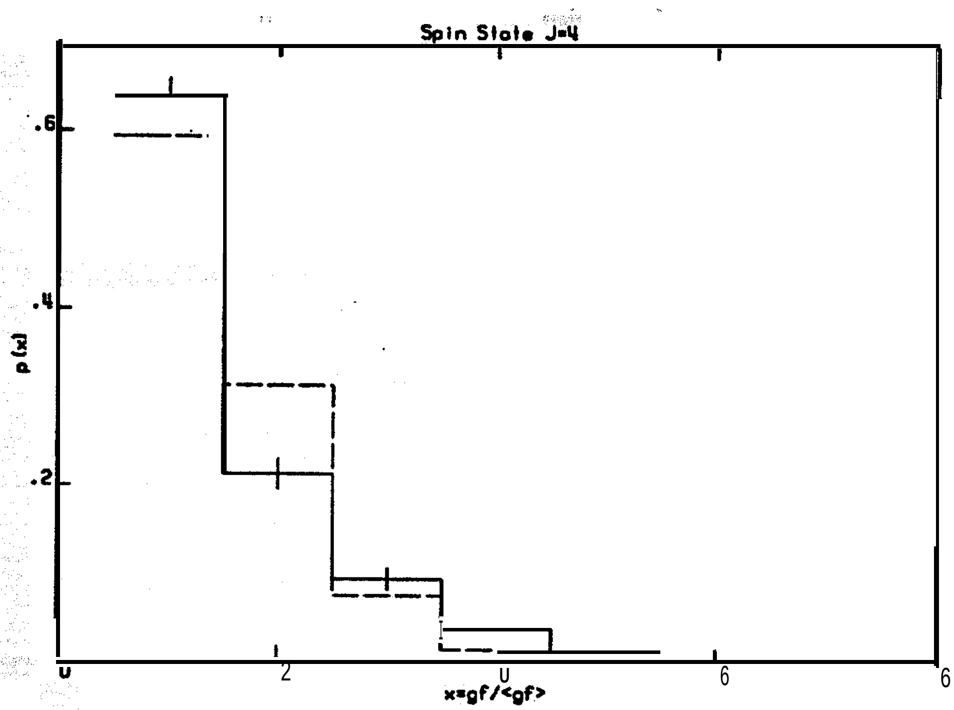

Fig. 6.' Fission-width distribution for J = 4. Calculations (solid line) compared with χ^2 distribution with 4 degrees of freedom (dashed line).

g. Δ_3 statistic test for spin group 1

The output created in this run is shown in Table 7. The corresponding graphic output is given in Fig. 7. The FORODF sequence of statements used for generating the plot given in Fig. 7 is the following:

dvt **/nohist** fl **s2se0ee500,/hist** fl **s3**

Table 7. The A, results for J = 3 (only the first 30 ^{235}U s-wave resonances are shown)

```
                  Delta3 Results

      theory              std                 measured
5.88297433-01 ± 1.09548773-01          5.20125813-01

                  Coefficients

 a= 7.16210073-01         b=-2.02650653-01

                  Energy Levels in the (-L,+L) Interval
```

Energy	N(E)	a*E+b
0.2775E+00	0.1000E+01	-0.38883-02
0.2034E+01	0.2000E+01	0.1254E+01
0.3139E+01	0.3000E+01	0.2046E+01
0.6189E+01	0.4000E+01	0.4230E+01
0.7698E+01	0.5000E+01	0.5311E+01
0.8942E+01	0.6000E+01	0.6202E+01
0.9754E+01	0.7000E+01	0.6784E+01
0.1071E+02	0.8000E+01	0.7466E+01
0.1240E+02	0.9000E+01	0.8676E+01
0.1368E+02	0.1000E+02	0.9597E+01
0.1392E+02	0.1100E+02	0.9767E+01
0.1455E+02	0.1200E+02	0.1022E+02
0.1802E+02	0.1300E+02	0.1270E+02
0.1909E+02	0.1400E+02	0.1347E+02
0.2017E+02	0.1500E+02	0.1424E+02
0.2358E+02	0.1600E+02	0.1669E+02
0.2422E+02	0.1700E+02	0.1714E+02
0.2553E+02	0.1800E+02	0.1808E+02
0.2644E+02	0.1900E+02	0.1873E+02
0.2716E+02	0.2000E+02	0.1925E+02
0.2833E+02	0.2100E+02	0.2009E+02
0.3059E+02	0.2200E+02	0.2171E+02
0.3203E+02	0.2300E+02	0.2273E+02
0.3457E+02	0.2400E+02	0.2456E+02
0.3487E+02	0.2500E+02	0.2477E+02
0.3517E+02	0.2600E+02	0.2499E+02
0.3840E+02	0.2700E+02	0.2730E+02
0.3988E+02	0.2800E+02	0.2836E+02
0.4152E+02	0.2900E+02	0.2953E+02
0.4186E+02	0.3000E+02	0.2978E+02

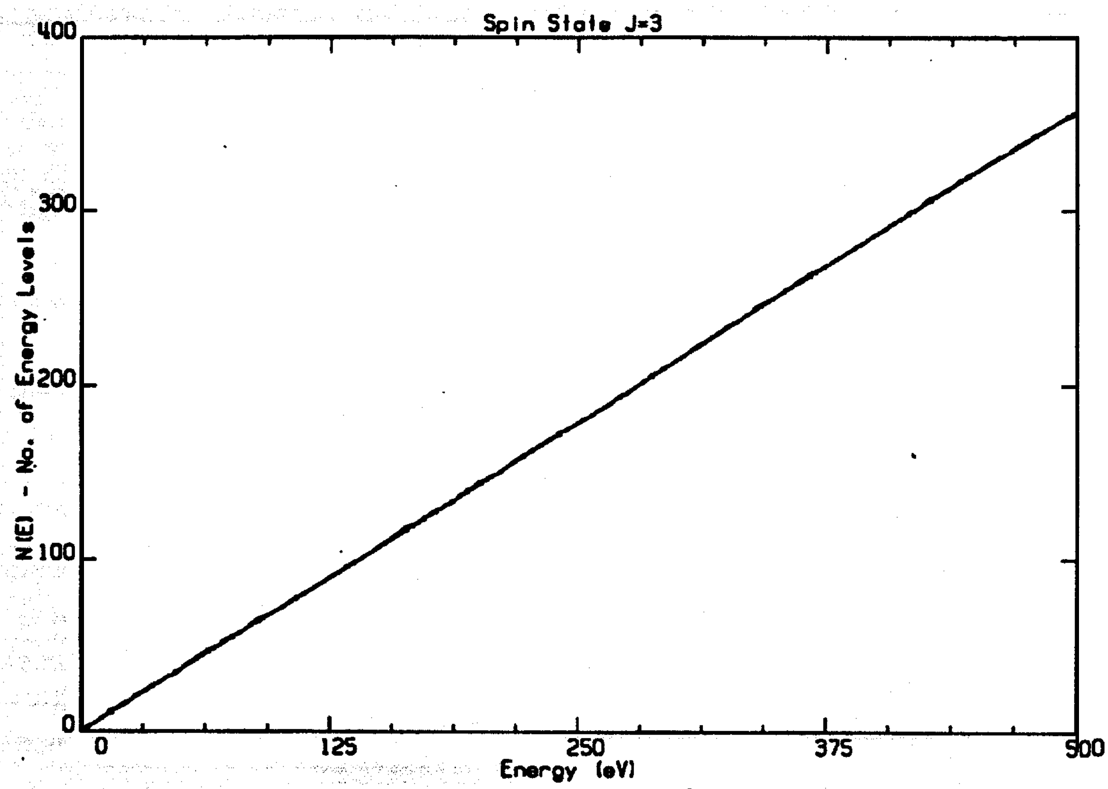

Fig. 7. **Cumulative number** of **energy** levels **vs** energy for J = 3.

h. Δ_3 statistic test for spin **group** 2

The output created in this run is shown in Table 8. The corresponding graphic output is given in Fig. 8. The **FORODF sequence** of statements used **for** generating the **plot** given in Fig. 8 is the following:

dvt **/nohist** fl **s2se0ee500,/hist** fl **s3**

Table 8. The A_3 results for J = 4 (only the first 30 ^{235}U s-wave resonances are shown)

Delta3 Results

theory	std	measured
6.32186003-01	± 1.09548773-01	6.3557750E-01

Coefficients

a= 1.1018183E+00 b=-1.0818267E+00

Energy Levels in the (-L,+L) Interval

Energy	N(E)	a*E+b
0.1133E+01	0.1000E+01	0.1663E+00
0.2777E+01	0.2000E+01	0.1978E+01
0.3614E+01	0.3000E+01	0.2900E+01
0.4852E+01	0.4000E+01	0.4264E+01
0.5438E+01	0.5000E+01	0.4910E+01
0.6393E+01	0.6000E+01	0.5962E+01
0.7079E+01	0.7000E+01	0.6718E+01
0.8767E+01	0.8000E+01	0.8578E+01
0.9277E+01	0.9000E+01	0.9140E+01
0.1016E+02	0.1000E+02	0.1012E+02
0.1167E+02	0.1100E+02	0.1177E+02
0.1240E+02	0.1200E+02	0.1258E+02
0.1286E+02	0.1300E+02	0.1309E+02
0.1327E+02	0.1400E+02	0.1354E+02
0.1411E+02	0.1500E+02	0.1447E+02
0.1541E+02	0.1600E+02	0.1590E+02
0.1609E+02	0.1700E+02	0.1664E+02
0.1664E+02	0.1800E+02	0.1725E+02
0.1803E+02	0.1900E+02	0.1878E+02
0.1900E+02	0.2000E+02	0.1985E+02
0.1929E+02	0.2100E+02	0.2018E+02
0.2063E+02	0.2200E+02	0.2165E+02
0.2107E+02	0.2300E+02	0.2213E+02
0.2293E+02	0.2400E+02	0.2418E+02
0.2341E+02	0.2500E+02	0.2472E+02
0.2435E+02	0.2600E+02	0.2575E+02
0.2499E+02	0.2700E+02	0.2645E+02
0.2649E+02	0.2800E+02	0.2810E+02
0.2778E+02	0.2900E+02	0.2953E+02
0.2813E+02	0.3000E+02	0.2992E+02

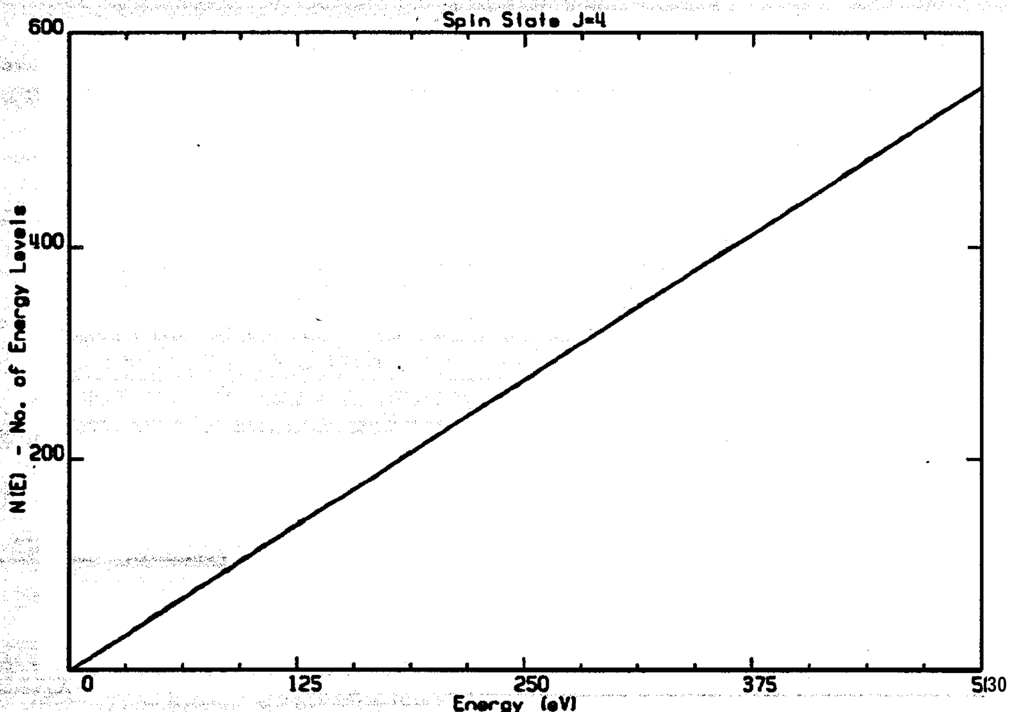

Fig. 8. Cumulative **number** of energy **levels** vs energy for J = **4**.

6. REFERENCES

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APPENDIX A

Listing of the SAMDIST code written in FORTRAN 77 language on the IBM RISC6000 platform.

```
c     program samdist
      character char*2
      write(6, *)' Type d (for spacing), w (for width), or d3 (for delta
     *3)'
      read(5, '(a)') char
      if( char .eq. 'd' .or. char .eq. 'd' ) call space
      if( char .eq. 'w' .or. char .eq. 'w' ) call width
      if( char .eq. 'd3' .or. char .eq. 'd3' ) call delta3'
      stop
      end
c -----------------------------------------------------
c
c
c
     subroutine'space
c
      character*20 file
      dimension e(5000),d(5000), ak(5000), akk(5000), std(5000),
     *y(5000)
      write(6, *)' Parameter file name'
      read(5,'(a)') file
      open(unit=l, file=file,status='old')
      open(unit=2, file='samdist.avg',status='unknown')
      write(6, *)' Spin group, initial and final energies'
      read(5,*) jspi, ei, ef
      k = 0
      sum1 = 0.0
      sum2 = 0.0
 1    read(1, 1000) er, gg, gn, gfl, gf2, il, i2, i3, i4, i5, i6
      if(er .lt. ei) go to 1
      if( er .le. ef .and. i6. eq. jspi) then
        k = k + 1
        e(k) = er
        go to 1
      else if( er .gt. ef) then
        go to 2
      else
        go to 1
      endif
 2    num = k - l
      do 3 i = 1, num
        d(i) = e(i + 1) - e(i)
 3    continue
      do 4 i = 1, num
        sum1 = sum1 + d(i)
        sum2 = sum2 + d(i) * d(i)
 4    continue
      dav = sum1/num
      nuns = num*(num-1)
      temp = num * sum2 - sum1 * sum1
      varil = temp/nuns
      vari2 = varil / num
```

```
      astd = sqrt( vari2 )
      do.5 i = 1, num
        d(i) = d(i)/dav
 5    continue
      call order(num, d)
      write(2,1002) dav, astd, num
      call sample( num, d, ak ,akk, std)
      call wigdis(y)
      write(2,1003)
     *write(2,1004) ( ak(i), ak(i+l), akk(i+l), std(i+l), y(i+1),
                   i=l, num- 1)
      write(6, *)'Average and sampling values are in file *** samdist.av
     *g ***'
      call plot(ak, akk, std, y, num)
      return
 1000 format( 5e11.4, 6i2 )
 1002 format(1x,1p,' < d > = ',e11.4,' std=',e11.4//
     *       ' number of levels = ', i4)
 1003 format(///6x,'Sampling Interval',6x,'Calculated',5x,'sdt',8x,
     *       'Theory')
 1004 format(1x,e11.4,'  -',e11.4,1x,e11.4,1x,e11.4,1x,e11.4)
      end
c -----------------------------------
c
c
c
      subroutine wigdis(y)
c
      dimension y(5000)
      common/a1/delt,num
c program to calculate wigner spacing distribution for one population
      sum=0.
      xl = 0.0
      do 1 i = 1, num + 1
        x = i * delt - delt
        ponl = 0.7854 * xl * xl
        pon2 = 0.7854 * x * x
        if(pon1 .ge. 20.0) ponl = 20.0
        if(pon2 .ge. 20.0) pon2 = 20.0
        expl = exp( - ponl )
        exp2 = exp( - pon2 )
        y(i)=( expl - exp2 )
        xl = x
 1    continue
      return
      end
c -----------------------------------
c
c
c
      subroutine width
c
      character*20 file, word, char, chwid(3)
      dimension ak(5000), akk(5000), std(5000), y(5000)
      dimension x(5000), ggam(5000)
c
      data chwid/'< gn >', '< gf >', '< gg >'/
      write(6,*)' Parameter file name'
```

```
      read(5,'(a)') fjle
      open(unit=l,  file=file,status='old')
      open(unit=2, file='samdist.avg',status='unknown')
      write(6,*)' enter particle channel'
      read(5,'(a)') word
      write(6,*)' Spin state,  initial and final energy '
      read(5,*) jspi, ei, ef
      k = O
      sum1 = 0.0
      sum2 = 0.0
1     read(1, 1000) er, gg, gn, gfl, gf2, il, i2, i3, i4, i5, i6
      if( er .lt. ei ) then
        go to 1
      else if ( i6 .eq. jspi ) then
        k = k + 1
        if( word .eq. 'gamma' ) then
          sum1 = sum1 + gg
          sum2 = sum2 + gg * gg
          wid = gg
        else if( word .eq. 'neutron') then
          sum1 = sum1 + gn/sqrt(er)
          sum2 = sum2 + gn * gn / er
          wid = gn/sqrt(er)
        else if( word .eq. 'fission') then
        sum1   = sum1 + abs(gf1) + abs(gf2)
          sum2 = sum2 + (abs(gf1) + abs(gf2)) *
     *            (abs(gf1) + abs(gf2))
          wid = abs(gf1) + abs(gf2)
        end if
        ggam(k) = wid
        go to 1
      else if(er .lt. ef) then
        go to 1
      end if
2     n u m = k - 1
      if( word .eq.  'neutron') then
        char = chwid(1)
      else if(word .eq. 'fission') then
        char = chwid(2)
      else if(word .eq. 'gamma') then
        char = chwid(3)
      endif
      avegam = sum1/num
      do 3 i = 1, num
        x(i) = ggam(i)/avegam
3     continue
      nuns = num * ( num- 1)
      temp = num* sum2 - sum1 * sum1
      varil = temp/nuns
      vari2 =  varil  /  num
      astd = sqrt(vari2)
      call order(num, x)
      write(2,1002)char, avegam, astd, num
      call sample( num, x, ak, akk, std)
      call chisq(y)
      write(2,1003)
      write(2,1004) ( ak(i), ak(i+l), akk(i+1), std(i+1), y(i+l),
     *                 i = l , n u m - 1 )
```

```
      write(6,  *)'Average and sampling values are in file *** samdist.av
     * g  ***'
      call  plot(ak,akk,std,y,num)
      return
 1000 format( 5e11.4, 6i2)
 1002 format(1x, lp,  a6,' = ',e11.4,' std=',e11.4//
     *                ' number of levels = ', i4)
 1003 format(///6x,'Sampling Interval',6x,'Calculated',5x,'std',8x,
     *        'Theory')
 1004 format(1x, e11.4,' -', e11.4, lx, e11.4, lx, e11.4,1x, e11.4)
      end
c  ------------------------------------------
C
C
C
      subroutine sample( num, x, ak, akk, std)
      dimension ak(5000), k(5000), akk(5000), x(5000), std(5000)
      common/a1/delt,nnum
      write(6,*)' Bin width for sampling'
      read(5,*) delt
      nnum = x(num) / delt
      if( nnum * delt .lt. x(num) ) nnum = nnum + 1
      do 2 j =  1, num
      gn = x(j)
      i = 1
      tdelt = delt
 1    if ( gn .le. tdelt ) then
         k(i) = k(i) + 1
      else
         i = i + 1
         tdelt = tdelt + delt
         go to 1
      endif
 2    continue
      num=  nnum
      ak(1) = 0.0000
      do 3 i = 1, num
        ak(i+1) = ak(i) + delt
 3    continue
      aksum = 0
      do 4 i = 1, num
        aksum = aksum + k(i)
 4    continue
      akk(1) = 0.0
      do 5 i = 2, num
        akk(i) = k(i-1)/aksum
        pk = akk(i)
        ains = pk * ( 1.0 - pk )
        if( akk(i) .ne. 0.0) std(i) = sqrt(ains/(aksum - 1.0))
 5    continue
      knum=  num
      if ( knum .ge. 50 ) knum = 50
      write(2,  100) delt, ( k(i) , i = 1, knum )
      return
 100  format(//' no. of levels in each interval of ',
     *        e11.4 // 10i4 // 10i4 // 10i4 // 10i4 // 10i4)
      end
```

```
c -------------------------------------
c
c
c
      subroutine  chisq(yy)
c
      dimension yy(5000)
      common/rq/xf
      common/a1/del, n
c
      external chipdf
c
      write(6,*)' Degrees of freedom:'
      read(5,*) df
      xf=df
      delz=del
      zl=0.0
      yy(1) = 0.0
      do 10 i=1,n
      zu=delz*float(i)
      call rqg7(zl,zu,chipdf,y)
c
      yy(i+1) = y
      zl=zu
 10   continue
      return
      end
      function chipdf(z)
c   -------------------------------------------------------
c
c
c
      common/rq/df,p1,p2,p3
c
      z = df * z
      dfh=df/2.0
      edfh=dfh-1.0
      call gamma(df, gam)
      c=dfh/((2.0**edfh)*gam)
      chipdf=c*(z**edfh)*exp(-z/2.0)
      return
      end
c ----------------------------------
c
c
      subroutine rqg7(xl,xu,fct,y)
c
      common/rq/parm1,parm2,parm3,parm4,parm5
c
      a=.5*(xu+xl)
      b=xu-xl
      c=.4745540*b
      y=.06474248*(fct(a+c)+fct(a-c))
      c=.3707656*b
      y=y+.1398527*(fct(a+c)+fct(a-c))
      c=.2029226*b
      y=y+.1909150*(fct(a+c)+fct(a-c))
      y=b*(y+.2089796*fct(a))
```

```
      return
      end
c ----------------------------------------
c
c
c
      subroutine gamma(df, gam)
      ad = amod(df, 2.0)
      if ( ad .eq. 0.0 ) then
         gam = 1.0
         1 = df/2.0 - 1.0
         akey = 0.0
      else
         gam = l-7724539
         1 = df/2.0
         akey = 0.5
      endif
      if( df .eq. 1.0 .or. df .eq. 2.0 ) return
      do 1 i = 1, 1
        dn = float(i) - akey
        gam = dn * gam
 1    continue
      return
      end
c ------------------------------------
c
c
c
      subroutine delta3
c
      character*30 file
      dimension e(5000), akp(5000), yp(5000)
      write(6,*)' Parameter file name'
      read(5, '(a)') file
      open(unit=1, file=file, status='old')
      write(6,*)'Spin group,  intial and final energies'
      read(5,*) jspin, el, eh
      open(unit=2, file='samdist.avg', status='unknown')
      pi = 3.141592654
      last=1
1     read(1, 1000, end=2) etmp, j
      if(etmp .eq. 0.0) go to 2
      if(etmp .lt. el) go to 1
      if(etmp .gt. eh) go to 1
      if(j .ne. jspin) go to 1
      e(last) = etmp
      last = last + 1
      go to 1
2     continue
      last = last - 1
      if (last.gt.4000) stop 5
      do 5 l= 1, last
        if(l .eq. last)    go to 5
        ml = l + 1
       do 4 m = ml, last
          if(e(l) .le. e(m)) go to 4
        do 3 j = 1, 5
          tmp = e(1)
```

```
            e(l) = e(m)
            e(m) = tmp
3           continue
4         continue
5       continue
        alast = last
        s0 = (eh - e(last)) * alast
        s1=s0 * (eh + e(last))
        sn2=s0 * alast
        lml = last - 1
        do 6 l = 1, lml
          al = l
        tmp = al * (e(l+1) - e(l))
        so = so + tmp
        sl = s1 + tmp * (e(l+1) + e(l) )
        sn2 = sn2 + tmp * al
6       continue
        sl = 0.5 *  sl
        t0 = eh - el
        em1 = 0.5 * (eh + el)
        em2 = (eh * eh + eh *el + el * el)/3.0
        tl = em1 * t0
        t2 = em2 * to
        tmp = 12.0 /  to**3
        a = tmp * (sl - em1 * s0)
        b = tmp * (em2 * s0 - em1 * sl)
        de13 = (sn2 - b * s0 - a * sl) / t0
        del = 0.10132 * (log(alast) - 0.0686)
        fr = sqrt(1.169 / pi ** 4)
        write(2, 1001) del, fr, de13, a, b
        write(2,1002)
        ak = 0.0
        do 7 i = 1, last
          ak = ak + 1.0
        akp(i) = ak
          y = a * e(i) + b
        yp(i) = y
          write(2,1003) e(i), ak, y
 7      continue
        write(6, *)'Average and sampling values are in file *** samdist.av
       *g ***'
        call plot(e, akp, yp, yp, last)
        return
 1000 format(el1.4, 54x, i2)
 1001 format (/20x,' Delta3 Results'//10x,'theory',14x,'std',
       *12x,' measured' ,/ 5x, 1p,e14.7,' +/- ',e14.7,5x,e14.7////
       *20x,' Coeficients',//
       *'        a=',e14.7,'        b=',e14.7)
 1002 format(////20x,'Energy Levels in the (-L,+L) Interval'
       *//   '                Energy             N(E)          a*E+b ')
 1003 format(10x, e11.4, 4x, e11.4, 4x, e11.4)
        end
c-----------------------------------
c
c
c
        subroutine order(n, x)
        dimension x(n)
```

```
      dimension sig1(3000),sig2(3000),sig3(3000),sig4(3000)
      nl=n-1
      do 2 i = 1, nl
        i1 = i + 1
        do 1 j = il, n
          if(x(i) .le. x(j))go to 2
          temp = x(i)
          x(i) = x(j)
          x(j) = temp
    1   continue
    2 continue
      return
      end
c   -------------------------------------------------------------
c
c
      subroutine plot(energy, data, unc, theory, ndat)
c
c *** purpose -- make odf file containing four segments
c
c
      dimension energy(ndat), data(ndat), unc(ndat), theory(ndat)
      character*11 odffil
      data odffil /'samdist.odf'/
c
      if (ndat.eq.0) stop 'no points to be plotted'
      nbl = 3
      nsect = 4
      nch = ndat
      mode = 3
      ndstrt = 0
      iener = -1
      irun = 1
      call odfio(14, odffil, nbl, 1, nsect, nch,
     *     mode, ndstrt, iener, irun)
      call outodf(14, nbl, nsect, 1, mode, ndstrt, 1,
     *     nch, energy, 1)
      call outodf(14, nbl, nsect, 2, mode, ndstrt, 1,
     *     nch, data, 1)
      call outodf(14, nbl, nsect, 3, mode, ndstrt, 1,
     *     nch, unc, 1)
      call outodf(14, nbl, nsect, 4, mode, ndstrt, 1,
     *     nch, theory, 1)
      close (unit=14)
c
      return
      end
c
c     character*80 file
c     integer iu,ifb,new,ins,inc,mode,strt,iener,irun
c     file='dua1:[orela.forodf.test2]9252.ph1'
c     new=0
c     iu=20
c     call  odfio(iu,file,ifb,new,ins,inc,mode,strt,iener,irun)
c     type  l,ifb,ins,inc,mode,strt,iener,irun
c     format(     ' ifb=',i,/,
c     1       ' ins=',i,/,
c     1       ' inc=',i,/,
```

```
c     1      ' mode=',i,/,
c     1      ' strt=',i,/,
c     1      ' iener=',i,/,
c     1      ' irun=',i,/)
c     stop
c     end
c----------------------------------------------------------------------
c
c
c
      subroutine  odfio(iu,file,ifb,new,ins,inc,mode,strt,iener,irun)
      implicit none
c     include '/users/craven/forodf/odfhed.unv'
      integer*4  odfhed(126)
c 0=18 bit integer 1=32 bit integer 3=floating point
      integer*4 ndmode(1)
      equivalence(odfhed(l),ndmode(l))
c 0=sel data 1=csisrs 2=endf/b
      integer*4 nsorce(1)
      equivalence(odfhed(2),nsorce(1))
c numerical id
      integer*4 ndrun(1)
c equivalence(odfhed(3),ndrun(1))
c starting block number of comment section
      integer*4  ncblks(1)
      equivalence(odfhed(4),ncblks(1))
c number of bytes in comment section
      integer*4 ncwrds(1)
      equivalence(odfhed(5),ncwrds(1))
c starting block of scaler section
      integer*4 nsblks(1)
      equivalence(odfhed(6),nsblks(1))
c number of words in scaler section
      integer*4 nswrds(1)
      equivalence(odfhed(7),nswrds(1))
c starting word in scaler section of sel scaler/count section
      integer*4 ncstrt(1)
      equivalence(odfhed(8),ncstrt(1))
c  number  words in sel scaler/counter section
      integer*4 ncntrs(1)
      equivalence(odfhed(9),ncntrs(1))
c starting word in scaler section of sel variable section
      integer*4 nxstrt(1)
      equivalence(odfhed(lO),nxstrt(l))
c number of words in sel variable section
      integer*4 nxwrds(1)
      equivalence(odfhed(ll),nxwrds(l))
c starting block of parameter section
      integer*4 npblks(1)
      equivalence(odfhed(12),npblks(1))
c number words in parameter section
      integer*4 npwrds(1)
     equivalence(odfhed(13),npwrds(1))
c =0 data described by parameter section =1 data corresponds to sect 1
      integer*4 ndtype(1)
      equivalence(odfhed(14),ndtype(1))
c number of datasets in data section
    integer*4  ndvars(1)
```

4

```
      equivalence(odfhed(15),ndvars(1))
c starting block of data section
      integer*4 ndblks(1)
      equivalence(odfhed(16),ndblks(1))
c number of words in each dataset
      integer*4 ndwrds(1)
      equivalence(odfhed(17),ndwrds(1))
c endf/b designation (charge,mass)
      integer*4 ndzan(1)
      equivalence(odfhed(18),ndzan(1))
c endf/b ratio nuclear mass to neutron
      integer*4 ndawr(1)
      equivalence(odfhed(19),ndawr(1))
c endf/b number assigned by national neutron cross section center
      integer*4 ndmat(1)
      equivalence(odfhed(20),ndmat(1))
c endf/b file number
      integer*4 ndmf(1)
      equivalence(odfhed(21),ndmf(1))
c endf/b reaction type number
      integer*4 ndmt(1)
      equivalence(odfhed(22),ndmt(1))
c if ndtype=l then ndvswt =0 engery decreases, =1 increases
      integer*4 ndvswt(1)
      equivalence(odfhed(23),ndvswt(1))
c =1 data dead time created, =0 not
      integer*4 nddswt(1)
      equivalence(odfhed(24),nddswt(1))
c starting word of data from mode 0
      integer*4 ndstrt(1)
      equivalence(odfhed(25),ndstrt(1))
c last word written of parameter section
      integer*4 ndwend
      equivalence (odfhed(26),ndwend)
c  words 27 through 126 is energy index table,
c largest energy for each n blocks, n=(ndwrds/125)+1
      real*4 ndtabl(100)
      equivalence(odfhed(27),ndtabl(1))
c starting block number of comment section
      integer  iu,ifb,new,ins,inc,mode,strt,iener,irun,iarray(l)
      integer ibuf4(126)
      integer*4 i,j,k,l,zero,iblk,ibc,ilc,isc,isn,index,junk,iword4
      integer*4  iii,system
      integer*2 ibuf2(252),xword4(2),iword2
      logical*4 ex
      character*(*) file
      character commd*3,fcommd*252
      equivalence (xword4(1),iword4),(xword4(1),iword2)
      equivalence (ibuf2(1),odfhed),(ibuf4(1),odfhed)
      data commd/'rm '/
      data zero/O/
c
      if(new.eq.O) then
        open(unit=iu,
     1        file=file,
     1        status='old',
     1        access='direct',
     1        recl=512)
```

```
      else
c       inquire(file=file,exist=ex)
c       if(ex) then
c         fcommd=commd//file//char(0)
c         iii = system(fcommd)
c         endif
        open(unit=iu,
     1        file=file,
     1        status='unknown',
     1        access='direct',
     1        recl=512)
        go to 12
c       endif
      endif
c
c
      read(iu,rec=l)odfhed
      ins=ndvars(l)
      ifb=ndblks(1)
      inc=ndwrds(1)
      mode=ndmode(1)
      strt=ndstrt(l)
      iener=0
      if(ndtype(1).ne.0)iener=-1
      irun=ndrun(l)
      j=125
      if(mode.eq.0)j=250
      i=(inc-1)/j
      if(i*j.ne.inc)i=i+l
      iblk=ifb+(i*ins)-1
      read(iu,rec=iblk,err=l)odfhed
      return
1     write(iu,rec=iblk)odfhed
      return
      entry  outodf(iu,ifb,ins,isn,mode,strt,isc,inc,iarray,index)
      if(ins.le.0)go to 14
      if(isn.le.0)go to 14
      if(isn.gt.ins)go to 14
      if(isc.le.0)go to 14
      if(inc.le.0)go to 14
      ibc=1
      ilc=inc
      if(mode.eq.0)go to 23
      iblk=(isc-1)/125
      i=isc-(iblk*125)
      iblk=(iblk*ins)+ifb+isn-1
      if(i.eq.l)go to 3
      read(iu,rec=iblk)ibuf4
      l=i+ilc-1
      if(l.gt.125)l=125
      do 2 j=i+1,l+1
      ibuf4(j)=iarray(ibc)
2     ibc=ibc+index
      write(iu,rec=iblk)odfhed
      ilc=ilc-(l-i+l)
      if(ilc.eq.0)return
      .iblk=iblk+ins
3     i=ilc/125
```

```
      if(i.eq.0)go to 5
      do 4 j=ibc,ibc-1+(i*125*index),125*index
      write(iu,rec=iblk)zero,(iarray(k),k=j,j+(125*index),index)
4     iblk=iblk+ins
      ibc=ibc+(i*125*index)
      ilc=ilc-(i*125)
      if(ilc.eq.0)return
5     read(iu,rec=iblk)ibuf4
      do 6 j=2,ilc+1
      ibuf4(j)=iarray(ibc)
6     ibc=ibc+index
      write(iu,rec=iblk)ibuf4
      return
      entry  inodf(iu,ifb,ins,isn,mode,strt,isc,inc,iarray,index)
      if(ins.le.0)go to 16
      if(isn.le.0)go to 16
      if(isn.gt.ins)go to 16
      if(isc.le.0)go to 16
      if(inc.le.0)go to 16
      ibc=l
      ilc=inc
      if(mode.eq.0)go to 20
      iblk=(isc-1)/125
      i=isc-(iblk*125)
      iblk=(iblk*ins)+ifb+isn-1
      if(i.eq.1)go to 8
      read(iu,rec=iblk)ibuf4
      iblk=iblk+ins
      l=i+ilc-1
      if(l.gt.125)l=125
      do 7 j=i+l,l+l
      iarray(ibc)=ibuf4(j)
7     ibc=ibc+index
      ilc=ilc-(l-i+1)
      if(ilc.eq.0)return
8     i=ilc/125
      if(i.eq.0)go to 10
      do 9 j=ibc,ibc-1+(i*125*index),125*index
      read(iu,rec=iblk)junk,(iarray(k),k=j,j-1+(125*index),index)
9     iblk=iblk+ins
      ibc=ibc+(i*125*index)
      ilc=ilc-(i*125)
      if(ilc.eq.0)return
10    read(iu,rec=iblk)ibuf4
      do 11 j=2,ilc+1
      iarray(ibc)=ibuf4(j)
11    ibc=ibc+index
      return
12    do 13 i=1,126
13    odfhed(i)=0
      if(mode.eq.0.and.iener.ne.0)go to 28
      if(mode.eq.0.and.ins.ne.1)go to 28
      if(mode.ne.0.and.strt.ne.0)go  to  28
      if(strt.lt.0)go to 28
      ndmode(1)=mode
      ndrun(l)=irun
      ndwrds(l)=inc
      ndvars(l)=ins
```

```
      ndtype(1)=0
      if(iener.ne.0)ndtype(1)=-1
      ndstrt(1)=strt
      ncblks(1)=2
      nsblks(1)=3
      npwrds(1)=128
      if(ndmode(1).eq.0)ndtype(1)=0
      ncwrds(1)=1*126
      ncstrt(1)=32+1
      nxstrt(1)=ncstrt(1)+ncntrs(1)
      nswrds(1)=nxstrt(1)+nxwrds(1)
      nsblks(1)=ncblks(1)+ncwrds(1)/126
      if(ncwrds(1)-((ncwrds(1)/126)*126).ne.0)nsblks(1)=nsblks(1)+1
      npblks(1)=nsblks(1)+nswrds(1)/126
      if(nswrds(1)-((nswrds(1)/126)*126).ne.0)npblks(1)=npblks(1)+1
      ndblks(1)=npblks(1)+npwrds(1)/126
      if(npwrds(1)-((npwrds(1)/126)*126).ne.0)ndblks(1)=ndblks(1)+1
      ifb=ndblks(1)
      write(iu,rec=l)odfhed
      do 131 i=1,126
131   odfhed(i)=0
      do 132 i=2,ifb-1
132   write(iu,rec=i)odfhed
      j=125
      if(mode.eq.0)j=250
      i=(inc-1)/j
      if(i*j.ne.inc)i=i+1
      iblk=ifb+(i*ins)-1
      write(iu,rec=iblk)odfhed
      return
14    print 15
15    format(' bad calling parameters'to outodf')
      go to 18
16    print 17
17    format(' bad calling parameters to inodf')
18    print 19,iu,ifb,ins,isn,isc,inc,index
19    format(1x,'iu=',i5,
     1       /,1x,'ifb=',i5,
     2       /,1x,'ins=',i5,
     3       /,1x,'isn=',i5,
     4       /,1x,'isc=',i5,
     5       /,1x,'inc=',i5,
     6       /,1x,'index=',i5)
      return
c mode 0 inodf
20    iword4=0
      iblk=(isc-1+strt)/250+ifb
      i=isc+strt-(((isc-1+strt)/250)*250)+2+250
      do 22 j=ibc,ilc
      if(i.le.252)goto 21
      read(iu,rec=iblk)ibuf2
      iblk=iblk+1
      i=i-250
21    iword2=ibuf2(i)
      iarray(j)=iword4
22    i=i+l
      return
c mode 0 outodf
```

```
23    iblk=(isc-1+strt)/250+ifb
      read(iu,rec=iblk,err=24)ibuf2
24    i=isc+strt-(((isc-1+strt)/250)*250)+2
      do 27 j=ibc,ilc
      if(i.le.252)goto 26
      write(iu,rec=iblk)ibuf2
      iblk=iblk+1
      read(iu,rec=iblk,err=25)ibuf2
25    i=i-250
26    iword4=iarray(j)
      ibuf2(i)=iword2
27    i=i+1
      write(iu,rec=iblk)ibuf2
      return
28    print 29,iu,file,ifb,new,ins,inc,mode,strt,iener,irun
29    format(' bad calling parameters to odfio',
     9      /' iu=',i5,
     1      /,' file=',a10,
     2      /,' ifb=',i5,
     3      /,' new=',i5,
     4      /,' ins=',i5,
     5      /,' inc=',i5,
     6      /,' mode=',i5,
     7      /,' strt=',i5,
     8      /,' iener=',i5,
     9      /,' irun=',i5)
      return
      end
```

APPENDIX B

Listing of the ^{235}U s-wave resonance parameters. File **0to500.par**

```
-1.0000E+02 3.8000E+01 1.6706E+00 7.7266E+01 4.0386E+02 6 0 0 0 0 1
-4.6000E+00 3.7000E+01 9.0687E+00 2.2366E+02-6.7591E+01 0 0 0 0 0 2
-2.2787E+00 3.8000E+01 6.3845E-01-2.4673E+02-4.5637E+02 0 0 0 8 0 1
-3.46513-01 3.7000E+01 5.7222E-02-2.5085E+00-1.2276E+02 0 0 0 0 0 2
 2.77523-01 3.8000E+01 4.2587E-03 6.4708E+01-5.0970E+01 0 0 0 0 0 1
 1.1328E+00 3.7000E+01 1.41253-02 1.1164E+00 1.1419E+02 0 0 0 0 0 2
 2.0342E+00 3.7075E+01 9.0397E-03-1.0186E+01 9.6326E-01 0 0 0 0 0 1
 2.7769E+00 3.7000E+01 1.0049E-03 9.8618E+01-1.3963E+01 0 0 0 0 0 2
 3.1392E+00 3.8000E+01 2.5018E-02-5.3397E+01 5.4869E+01 0 0 0 0 0 1
 3.6137E+00 3.6387E+01 4.3621E-02-3.4449E+01 1.8262E+01 0 0 0 0 0 2
 4.8518E+00 3.6007E+01 5.5733E-02-1.9260E-03-4.2928E+00 0 0 0 0 0 2
 5.4381E+00 3.7000E+01 2.7802E-02-1.7138E+02-3.7656E+02 0 0 0 0 0 2
 6.1888E+00 3.8000E+01 8.1032E-02-1.4833E+02 1.0424E+02 0 0 0 0 0 1
 6.3931E+00 3.7542E+01 2.33103-01 6.2438E+00 2.8742E+00 0 0 0 0 0 2
 7.0790E+00 3.7362E+01 1.1200E-01-7.2162E+00 2.5496E+01 0 0'0 '6 0 2
 7.6981E+00 3.8000E+01 2.9724E-03 4.1617E+01 1.8962E+02 0 0 0 0 0 1
 8.7669E+00 3.2770E+01 9.3552E-01 4.1135E+01-5.8071E+01 0 0 0 0 0 2
 8.9422E+00 3.8000E+01 1.1035E-01-3.6592E+01 2.9085E+02 0 0 0 0 0 1
 9.2770E+00 3.7000E+01 1.2020E-01 5.0947E+01 2.2449E+01 0 0 6 6' 0 2
 9.7544E+00 3.8000E+01 6.60643-02 1.9849E+02-8.8398E+01 0 0 0 0 0 1'
 1.0165E+01 3.7000E+01 5.3563E-02-4.2913E+00-6.3446E+01 0 0 0 0 0 2
 1.0707E+01 3.8000E+01 2.9322E-02-1.6389E+02-3.5148E+02 0 0 0 0 0 1
 1.1667E+01 3.7780E+01 5.1510E-01-5.6759E+00 8.2592E-01 0 0 0 0 0 2
 1.2397E+01 3.9024E+01 1.3605E+00-5.6829E-01 2.4246E+01 0 0 0 0 0 1
 1.2401E+01 3.7000E+01 6.6850E-02 1.3603E+02 9.4961E+01 0 0 0 0 0 2
 1.2859E+01 3.7000E+01 7.61563-02 9.5230E-01 1.3559E+02 0' 6 0 0 0 2
 1.3267E+01 3.7000E+01 5.9740E-02-8.8486E+01 9.7369E+01 0 0 0 0 0 2
 1.3683E+01 3.8000E+01 6.9598E-02-3.4852E+01-1.1293E+02 0 0 0 0 0 1
 1.3920E+01 3.8000E+01 5.7238E-01-3.6940E+02 1.1229E+02 0 0 0 0 0 1
 1.4112E+01 3.7000E+01 7.0656E-03-7.2601E+01 4.7644E+01 0 0 0 0 0 2
 1.4552E+01 3.8873E+01 1.1324E-01 1.0515E+01 4.9953E+00 0 0 0 0 0 1
 1.5409E+01 3.9438E+01 2.1255E-01-6.2921E+00 4.9428E+01 0 0 0 0 0 2
 1.6087E+01 3.5379E+01 3.40143-01 1.3126E+01 9.3191E+00 0 0 0 0 0 2
 1.6642E+01 3.2798E+01 2.4477E-01 1.3624E+01 9.9609E+01 0 0 0 0 0'2
 1.8022E+01 3.8000E+01 2.92143-01 6.1194E+01-5.9338E+01 0 0 0 0 0 1
 1.8027E+01 3.7000E+01 9.68753-02 8.3183E+01-9.8024E+01 0 0 0 0 0 2
 1.8999E+01 3.5173E+01 5.3647E-02-1.0423E+00 1.1219E+01 0 0 0 0 0 2
 1.9089E+01 3.8000E+01 1.8287E-01-2.1432E+02 1.7498E+02 0 0 0 0 0 1
 1.9294E+01 3.7000E+01 2.7271E+00-2.9071E+01 3.5309E+01 0 0 0 0 0 2
 2.0172E+01 3.8000E+01 7.1054E-02 6.0954E+01-2.6886E+01 0 0 0 0 0 1
 2.0631E+01 3.3926E+01 1.4327E-01 4.1982E+01 1.4665E-01 0 0 0 0 0 2
 2.1065E+01 3.9086E+01 1.3254E+00 1.4555E+01-1.3956E+01 0 0 0 0 0 2
 2.2931E+01 3.5407E+01 3.9623E-01-3.5853E+01 1.3834E+01 0 0 0 0 0 2
 2.3413E+01 3.0220E+01 6.4808E-01 4.3368E+00-5.9915E+00 0 0 0 0 0 2
 2.3582E+01 3.8000E+01 8.66073-01 1.5093E+02-4.8697E+01 0 0 0 0 0 1
 2.4217E+01 3.8000E+01 2.59203-01 3.1595E+01-6.7122E-01 0 0 0 0 0 1
 2.4349E+01 3.8000E+01 9.2985E-02-4.7425E+01-1.3058E+02 0 0 0 0 0 2
 2.4988E+01 3.7000E+01 9.0667E-03-1.1401E+02 9.2208E+01 0 0 0 0 0 2
 2.5527E+01 3.8000E+01 1.4672E+00-4.8947E+02 1.9611E+02 0 0 0 0'0 1
 2.6440E+01 3.8000E+01 4.3208E-01-2.9723E+02 1.6649E+02 0 0 0 0 0 1
 2.6486E+01 3.7000E+01 2.7720E-01-1.0453E+02-2.0636E+01 0 0 0'0 0 2
 2.7161E+01 3.6188E+01 5.3460E-02-1.1117E+00-3.8587E+01 0 0 0 0 0 1
 2.7783E+01 3.7000E+01 6.0174E-01-8.0364E+01-6.7009E+00 0 0 0 0 0 2
 2.8134E+01 3.7000E+01 2.4474E-02 1.3880E+00 1.2669E+01 0 0 0 0 0 2
 2.8335E+01 3.8000E+01 2.0237E-01-2.4568E+01 8.0230E+01 0 0 0 0 0 1
 2.8733E+01 3.7000E+01 2.2120E-02 6.0583E-02 6.0711E+01 0 0 0 0 0 2
 2.9642E+01 3.2121E+01 1.4628E-01-7.5304E+00 1.3753E+01 0 0 0 0 0 2
 3.0591E+01 3.8000E+01 2.3526E-01-1.5694E+01 8.6071E+01 0 0 0 0 0 1
 3.0866E+01 3.6292E+01 4.7442E-01-6.1763E-01 1.7764E+01 0 0 0 0 0 2
 3.2025E+01 3.7996E+01 5.3019E-01-1.9502E+01 7.6605E+01 0 0 0 0 0 1
```

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3.2069E+01 3.7000E+01 1.2675E+00-1.6137E+00 4.9449E+01 0 0 0 0 0 2
3.3482E+01 3.7000E+01 2.40293-02 2.2195E+01 7.0731E+01 0 0 0 0 0 2
3.3509E+01 3.3970E+01 1.6197E+00-1.3349E+01 1.4913E+01 0 0 0 0 0 2
3.4348E+01 3.2553E+01 1.6851E+00 1.2475E+00 2.8861E+01 0 0 0 0 0 2
3.4570E+01 3.8000E+01 5.25913-01 1.2376E+02 1.7334E+02 0 0 0 0 0 1
3.4869E+01 3.8000E+01 1.6027E+00-2.0268E+01 9.8151E+01 0 0 0 0 0 1
3.5065E+01 3.3016E+01 8.07873-01 3.2382E+02-5.6865E-02 0 0 0 0 0 2
3.5168E+01 3.8000E+01 4.0324E+00-6.4583E+01 1.3966E+01 0 0 0 0 0 1
3.5700E+01 3.7000E+01 1.1885E-03-1.4321E+00 2.5156E+01 0 0 0 0 0'2
3.6042E+01 3.7000E+01 1.8868E-02-1.4883E+02 4.4191E+01 0 0 0 0 0 2
3.7264E+01 3.7000E+01 3.5617E-03 1.8070E+02-1.9880E+01 0 0 0 0 0 2'
3.8335E+01 3.7000E+01 3.0332E-01-2.2308E+02-5.8570E+01 0 0 0 0 0 2
3.8405E+01 3.8000E+01 4 . 9 2 0 7 3 - 0 4   5.3938E+01-2.8234E+01 0 0 0 0 0 2
3.9386E+01 3.8355E+01 2.3374E+00-1.7576E+01 5.0737E+01 0 0 0 0 0 2
3.9878E+01 3.8000E+01 3.4285E-01-1.7179E+01-1.5079E+02 0 0 0 0 0 1
4.0447E+01 3.7000E+01 2.7411E-01-5.3590E+00 1.7139E+02 0 0 0 0 0 2
4.1308E+01 3.7000E+01 1.9775E-01-4.0402E+01-1.3324E+02 0 0 0 0 0 2
4.1516E+01 3.8000E+01 6.2352E-01-1.5398E+00 2.6113E+02 0 0 0 0 0 1"'
4.1860E+01 3.8501E+01 1.3462E+00-1.2024E+01-1.1071E+00 0 0 0 0 0 1
4.2207E+01 3.7000E+01 2.8135E-01-6.0092E+01-1.5300E+01 0 0 0 0 0 2
4.2696E+01 3.8000E+01 2.4092E-01 5.3969E+00-1.2704E-01 0 0 0 0 0 2
4.3376E+01 3.0000E+01 6.7666E-01-5.0664E+00-8.2177E+00 0 0 0 0 0 1
4.3516E+01 3.7000E+01 3.6873E-02 1.1065E+02-1.2551E+01 0 0 0 0 0 2
4.3923E+01 3.7000E+01 3.5106E-01 4.6727E+01 8.5050E+01 0'0 0 0 0 2
4.4575E+01 3.7000E+01 6.2916E-01-8.6765E+01 4.2343E+01 0 0 0 0 0 2'
4.4979E+01 3.8000E+01 g-84883-01 4.2448E+02-2.2743E+02 0 0 0 0 0 1
4.5789E+01 3.7000E+01 l-73493-01 7.9243E+01-1.1104E+01 0 0 0 0 0 2
4.6766E+01 3.7000E+01 7.4151E-01-6.8319E+01-4.8356E+01 0 0 0 0 0 2
4.7014E+01 3.7000E+01 7.0046E-01-1.4848E-02 8.4393E+01 0 0 0 0 0 2
4.7939E+01 3.3785E+01 7.1017E-01 1.9405E+01 2.7217E+01 0 0 0 00 2
4.8324E+01 3.8000E+01 1.0793E+00 1.7324E+02-2.3674E+01 0 0 0 0 0 1
4.8760E+01 3.8000E+01 8.7660E-01 9.6290E+00-5.6104E+01 0 0 0 0 0 1
4.9431E+01 3.6223E+01 8.7001E-01-5.4629E+00-6.1861E+00 0 0 0 00 2
5.0079E+01 3.4367E+01 2.8087E-01     8.7051E+00-1.5494E+01 0 0 0 0 0 1'
5.0447E+01 3.3325E+01 9.9568E-01-3.5105E+01-1.2034E-01 0 0 0 0 0 1
5.1196E+01 3.8000E+01 1.4511E+00 7.0937E-01 1.2135E+02 0 0 0 0 0 1
5.1295E+01 3.7000E+01 1.8689E+00 6.7603E+01-3.8612E+00 0 0 0 0 0 2
5.1606E+01 3.7000E+01 5.7989E-01 4.3845E-01-9.5578E+01 0 0 0 0 0 2
5.2185E+01 3.8000E+01 3.2404E+00 8.8636E+01 3.1213E+02 0 0 0 0 0 1
5.2700E+01 3.7000E+01 5.1204E-05 3.2229E+02 4.4676E+01 0 0 0 0 0 2
5.2774E+01 3.7000E+01 2.6903E-03-1.5056E+02-6.6018E+01 0'0 0 0 0 2
5.3403E+01 3.8000E+01 5.8328E-01-8.0729E+01 1.5036E+01 0 0 00 1
5.4177E+01 3.7000E+01 1.0946E-01-6.3420E+01-2.1262E+01 0 0 0 0 0 2
5.4942E+01 3.8000E+01 6.2178E-01 1.1881E+00 8.8255E+01 0 0 0 0 0 1
5.5091E+01 3.8565E+01 2.3174E+00 7.3533E-01-3.6372E+01 0 0 0 0 0 2
5.5831E+01 3.7000E+01 1.9407E+00-1.2015E+02-9.9444E+01 0 0 0 0 0 2
5.6068E+01 3.8000E+01 1.4396E+00 1.5550E+02-6.5338E+01 0 0 0 0 0 1
5.6467E+01 3.7000E+01 4.3678E+00 1.8832E+01-6.7755E+01 0 0 0 0 0 2
5.7351E+01 3.7000E+01 2.2872E-04 8.3032E+01-5.2002E+01 0 0 0 0 0' 2
5.7755E+01 3.8000E+01 1.3251E+00-1.7768E+02 5.6116E+01 0 0 0 0 0 1
5.8077E+01 3.6773E+01 1.4168E+00 1.3689E+01-2.3398E+01 0 0 0 0 0 1
5.8642E+01 3.7000E+01 1.2131E+00-1.1453E+02-2.4263E+01 0 0 0 0 0 2
5.9688E+01 3.7000E+01 l-82483-01 9.4994E+01-1.1771E+02 0 0 0 0 0 2
6.0160E+01 3.8000E+01 1.3763E+00 3.4163E+01 2.2867E+02 0 0 0 0 0 1
6.0800E+01 3.7000E+01 4.5561E-01-1.4779E+02-6.4265E+00 0 0 0 0 0'2
6.1072E+01 3.8000E+01 4.3199E-01-9.9153E+01 1.4936E+01 0 0 0 0 0 1
6.1362E+01 3.7000E+01 5.1291E-02-8.1083E+01-2.3429E+02 0 0 0 0 0 2
6.2492E+01 3.7000E+01 1.1702E-01 3.4742E+01 2.6629E+02 0 0 0 0 0 '2
6.3166E+01 3.8000E+01 4.5712E-03 8.5627E+00-2.6160E+01 0 0 0 0 0 1
6.3593E+01 3.8000E+01 1.4752E+00 6.5306E+02 1.5807E+02 0 0 0 0 0 1
6.4289E+01 3.4066E+01 1.0040E+00-4.3750E-01 5.6949E+00 0 0 0 0 0 2
6.5197E+01 3.7000E+01 2.4057E-05 1.6653E+01-1.5138E+01 0-0 00 2'
6.5770E+01 3.0000E+01 3.8617E-01-2.8442E+01 4.9436E-01 0 0 0 0 0 1
6.6105E+01 3.7000E+01 4.5535E-02-8.3544E+01 5.3807E+01 0 0 0 0 2
6.7199E+01 3.7001E+01 6.8204E-02          632.3623E+01 0 0 0 020 0
                                               5.4743E+01 0 0 0 0 2
```

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6.7578E+01 3.7000E+01 1.9866E-05-4.5006E+01-5.2927E+01 0 0 0 0 0 2
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6.8580E+01 3.8000E+01 1.2451E-01 6.8655E+01-5.4703E+01 0 0 0 0 0 1
6.9204E+01 3.7000E+01 5.7530E-01-8.7337E+01-1.0245E+02 0 0 0 0 0 2
7.0260E+01 3.8000E+01 3.9596E-01-1.8081E+02-2.3799E+02 0 0 0 0 0 1
7.0374E+01 3.8000E+01 1.4692E+00 2.1952E+02-6.8254E-03 0 0 0 0 0 1
7.0451E+01 3.7000E+01 1.4375E+00 8.1521E+01 3.4528E+02 0 0 0 0 0 2
7.0783E+01 3.8000E+01 1.8056E+00-7.0766E+01 7.8832E+01 0 0 0 0 0 1
7.1652E+01 3.7000E+01 2.5206E-01-1.7983E+02-5.7181E-01 0 0 0 0 0 2
7.2363E+01 3.7000E+01 2.5078E+00-9.0887E+01-1.4277E+01 0 0 0 0 0 2
7.2888E+01 3.8000E+01 2.5330E-01-3.7380E-02 2.7583E+02 0 0 0 0 0 1
7.4491E+01 3.8000E+01 1.5566E+00-1.0112E+02 5.5035E+01 0 0 0 0 0 1
7.4521E+01 3.3022E+01 1.2690E+00 5.0439E-02 3.2637E+01 0 0 0 0 0 2
7.5155E+01 3.7000E+01 4.3451E-01 1.7148E+02 1.8138E+01 0 0 0 0 0 2
7.5552E+01 3.8000E+01 1.7836E+00 2.4946E+02 1.4978E+01 0 0 0 0 0 1
7.6720E+01 3.7000E+01 1.1813E-01 1.2130E+02-5.7548E+01 0 0 0 0 0 2
7.7073E+01 3.7000E+01 1.0119E-04 6.6530E+01 2.4448E+01 0 0 0 0 0 2
7.7481E+01 3.7000E+01 7.7208E-01-1.3193E+01 1.1859E+02 0 0 0 0 0 2
7.8068E+01 3.8000E+01 1.2270E+00 2.1190E+00 9.2980E+01 0 0 0 0 0 1
7.8418E+01 3.6729E+01 7.4817E-02 3.3425E+01 3.7541E+01 0 0 0 0 0 2
7.9664E+01 3.7000E+01 5.6493E-01-2.0687E+01-3.7262E+01 0 0 0 0 0 2
8.0351E+01 3.1260E+01 g-27323-01 1.4749E+02-1.0775E+00 0 0 0 0 0 1
8.0791E+01 3.4970E+01 1.0793E-01-3.7157E+01-1.4373E-02 0 0 0 0 0 2
8.0808E+01 3.3650E+01 1.1360E-04 4.3976E+01-2.0122E+02 0 0 0 0 0 2
8.1417E+01 3.4920E+01 1.1337E+00 1.4054E+01-9.8174E+01 0 0 0 0 0 1
8.2612E+01 3.4960E+01 1.0354E+00 1.5905E+00-5.0426E+00 0 0 0 0 0 2
8.2638E+01 3.5000E+01 1.6219E-03 6.1365E+01 4.8029E+02 0 0 0 0 0 1
8.2779E+01 3.5870E+01 6.5230E-01 1.3651E+01-1.5602E+02 0 0 0 0 0 2
8.3550E+01 3.4910E+01 9.5185E-01 3.9446E+01-1.3138E-01 0 0 0 0 0 2
8.3846E+01 3.4930E+01 8.0790E-01 1.6432E+02-1.0284E+02 0 0 0 0 0 1
8.4028E+01 3.4940E+01 2.2449E+00 1.9623E+02 1.2372E+02 0 0 0 0 0 2
8.4314E+01 3.4680E+01 8.1583E-01 6.3633E-01-6.9512E+01 0 0 0 0 0 1
8.4733E+01 3.4910E+01 2.0694E-04-9.4506E+01-3.3218E+01 0 0 0 0 0 2
8.4991E+01 3.4970E+01 1.8157E+00 1.1856E+02 3.6962E+02 0 0 0 0 0 1
8.5711E+01 3.4960E+01 5.7108E-01-3.2891E+02-1.5309E+02 0 0 0 0 0 2
8.6794E+01 3.4990E+01 4.9854E-01 4.4943E+01-8.2762E+01 0 0 0 0 0 1
8.7564E+01 3.5000E+01 7.3922E-01-2.2262E+02-9.8314E+01 0 0 0 0 0 1
8.8670E+01 3.4500E+01 2.8136E+00-1.4749E+02 3.0505E+02 0 0 0 0 0 1
8.8862E+01 3.5000E+01 3.2692E-01-1.5897E+02 2.3307E+01 0 0 0 0 0 2
8.9099E+01 3.5010E+01 1.6267E-01-6.9350E+00 9.1877E-01 0 0 0 0 0 2
8.9774E+01 3.4990E+01 6.0662E-01-4.7702E+01-6.4154E+01 0 0 0 0 0 2
9.0343E+01 3.4950E+01 3.9393E+00-1.2650E+02 4.1948E+01 0 0 0 0 0 2
9.0390E+01 3.5000E+01 2.0096E-01 3.3970E+02-2.5687E+02 0 0 0 0 0 2
9.1234E+01 3.4990E+01 2.9946E+00 8.4564E+01 1.7112E+02 0 0 0 0 0 1
9.2004E+01 3.4990E+01 5.1366E-01-4.6513E-01-6.4345E+01 0 0 0 0 0 2
9.2563E+01 3.4990E+01 2.1016E+00 8.0586E-01 3.1840E+01 0 0 0 0 0 2
9.3123E+01 3.5000E+01 9.5128E-02 1.6031E+02 7.9611E+01 0 0 0 0 0 2
9.3273E+01 3.5000E+01 2.6732E-01 5.9854E+00-8.7625E+01 0 0 0 0 0 1
9.4063E+01 3.5130E+01 3.0839E+00 2.7777E+00-5.0488E+00 0 0 0 0 0 2
9.4541E+01 3.5000E+01 1.0263E-04 3.2188E+01-4.7885E+01 0 0 0 0 0 2
9.4735E+01 3.4990E+01 5.6991E-01 4.4882E+01 3.2743E+01 0 0 0 0 0 1
9.5447E+01 3.4990E+01 1.1160E+00-2.3760E+02 3.1271E+02 0 0 0 0 0 2
9.6419E+01 3.4990E+01 9.4346E-01 4.0615E+02 1.4729E+02 0 0 0 0 0 1
9.6666E+01 3.5000E+01 3.5060E-02 1.5882E+02-2.9522E+01 0 0 0 0 0 2
9.8066E+01 3.4930E+01 2.9047E+00 1.8410E+02-1.7067E-01 0 0 0 0 0 1
9.9200E+01 3.5000E+01 3.5422E-03 2.2502E+02 1.0300E+02 0 0 0 0 0 2
9.9428E+01 3.4980E+01 4.8651E-01 1.0402E+01 1.3793E+02 0 0 0 0 0 1
1.0013E+02 3.5000E+01 2.2640E-04 1.4029E+02 2.4324E+02 0 0 0 0 0 2
1.0030E+02 3.4970E+01 5.1097E-01 6.8544E+01 8.9083E+00 0 0 0 0 0 2
1.0097E+02 3.4950E+01 7.6245E-01-3.0442E+01-1.4315E+00 0 0 0 0 0 2
1.0115E+02 3.5000E+01 9.0454E-04-2.3032E+02 9.0240E+01 0 0 0 0 0 1
1.0180E+02 3.4950E+01 3.9713E-01-4.4247E+01 3.1565E+01 0 0 0 0 0 1
1.0200E+02 3.5000E+01 6.8674E-05-2.4469E+02 1.4843E+00 0 0 0 0 0 2
1.0213E+02 3.5000E+01 2.0173E-05-4.6398E+02 3.3911E+02 0 0 0 0 0 2
1.0289E+02 3.3963E+01 2.3648E+00-7.5085E+00 1.1978E+02 0 0 0 0 0 2
1.0348E+02 3.5135E+01 3.8546E-01 1.7490E+02 1.3133E+01 0 0 0 0 0 1
```

1.0352E+02	4.0367E+01	1.1731E+00	1.7712E+01	5.2837E+00	0	0	0	0	0	2
1.0413E+02	3.4990E+01	2.6689E-01	-1.8288E+02	6.5211E+01	0	0	0	0	0	1
1.0501E+02	3.5000E+01	2.9742E-04	-6.1073E+02	-4.1296E+02	0	0	0	0	0	2
1.0513E+02	3.7965E+01	2.3230E+00	-1.0988E+02	4.0776E+01	0	0	0	0	0	1
1.0559E+02	3.4990E+01	l-39633-01	1.4528E+01	-1.2177E+02	0	0	0	0	0	2
1.0610E+02	3.4980E+01	6.7732E-01	2.3028E+00	-1.1636E+02	0	0	0	0	0	2
1.0680E+02	3.4990E+01	5.76113-01	3.5299E+02	-3.0501E+02	0	0	0	0	0	1
1.0761E+02	3.5461E+01	4.5413E+00	-9.8810E+00	6.8315E+00	0	0	0	0	0	1
1.0803E+02	3.4990E+01	3.6711E-01	9.3374E+00	-3.4741E+01	0	0	0	0	0	2
1.0887E+02	3.9935E+01	1.0070E+00	1.2006E+01	7.5134E+00	0	0	0	0	0	2
1.0980E+02	3.2128E+01	1.3134E+00	2.0665E-01	-2.1288E+00	0	0	0	0	0	2
1.1009E+02	4.2616E+01	1.2963E+00	-1.4424E+01	-2.7750E+02	0	0	0	0	0	1
1.1069E+02	3.5000E+01	5.4094E-02	-8.1868E+01	1.1003E+02	0	0	0	0	0	2
1.1126E+02	3.5000E+01	1.8109E-01	2.0153E+02	-1.4303E+02	0	0	0	0	0	1
1.1163E+02	3.9806E+01	g-55363-01	5.4421E+00	3.3274E+01	0	0	-0	0	6	-2
1.1279E+02	3.4990E+01	4.18033-01	5.6964E-01	-3.3308E+00	0	0	0	0	0	2
1.1348E+02	3.7708E+01	1.7081E+00	-1.0415E+02	-1.0970E+02	0	0	0	0	0	1
1.1389E+02	3.5000E+01	2.00833-02	1.0033E+02	1.5887E+02	0	0	0	0	0	2
1.1460E+02	3.5000E+01	1.52673-01	6.7099E-01	6.6642E+02	0	0	0	0	0	1
1.1505E+02	3.4990E+01	3.8821E-01	1.9952E+01	-1.6174E-01	0	0	0	0	0	2
1.1587E+02	3.5954E+01	2.2110E+00	-5.0037E+01	-1.7632E+02	0	0	0	0	0	1
1.1600E+02	4.0735E+01	1.0425E+00	-1.5288E+02	1.7693E+02	0	0	0	0'	0	2
1.1670E+02	3.5000E+01	1.7460E-05	-9.0360E+01	-9.1900E+01	0	0	0	0	0	2
1.1780E+02	3.5000E+01	3.3326E-01	-4.7527E+02	-2.1047E+02	0	0	0	0	0	1
1.1820E+02	3.6909E+01	2.4981E+00	-3.2500E+02	-1.0219E+02	0	0	0	0	0	2
1.1850E+02	3.5000E+01	1.2070E-04	-5.3500E+00	2.5490E+02	0	0	0	0	0	1
1.1858E+02	3.3622E+01	1.7561E+00	1.6988E-01	-1.3983E+01	0	0	0	0	0	2
1.1870E+02	3.9572E+01	9.2905E-01	-7.1038E+01	-5.7637E+01	0	0	0	0	0	2
1.1928E+02	3.5000E+01	7.6038E-02	-1.7553E+01	1.9689E+02	0	0	0	0	0	2
1.2018E+02	3.5000E+01	2.3677E-01	1.7922E+02	4.7386E+02	0	0	0	0	0	1
1.2040E+02	3.5000E+01	9.9880E-03	1.1230E+01	1.1770E+01	0	0	0	0	0	2
1.2105E+02	3.5000E+01	l-74223-01	6.6951E+01	3.7426E+01	0	0	0	0	0	2
1.2160E+02	3.5000E+01	7.6510E-06	-6.3430E+02	3.4020E+01	0	0	0	0	0	1
1.2191E+02	3.5667E+01	5.0561E+00	1.5811E+01	-1.2310E+02	0	0	0	0	0	2
1.2288E+02	3.5000E+01	3.9331E-01	2.5013E+00	8.5428E-01	0	0	0	0	0	2
1.2351E+02	3.5000E+01	5.6226E-01	1.2787E+02	1.0008E+02	0	0	0	0	0	1
1.2379E+02	3.5000E+01	1.9635E-01	-2.0984E+02	4.4712E+01	0	0	0	0	0	1
1.2463E+02	3.5000E+01	5.0860E-02	-7.1791E+00	-1.4383E+02	0	0	0	0	0	2
1.2472E+02	3.1274E+01	1.4144E+00	7.1016E+01	1.1987E+01	0	0	0	0	0	2
1.2522E+02	3.5000E+01	4.5982E-01	7.9928E+01	-6.6859E+01	0	0	0	0	0	1
1.2556E+02	3.5337E+01	2.0207E+00	-7.7151E-02	-7.9136E+00	0	0	0	0	0	2
1.2588E+02	3.9618E+01	3.4974E+00	-6.3398E+01	-2.4272E+02	0	0	0	0	0	2
1.2643E+02	4.1656E+01	3.4265E+00	2.2274E+02	-1.5932E+01	0	0	0	0	0	1'
1.2776E+02	3.5000E+01	4.5712E-01	-3.6129E+01	8.6082E+01	0	0	0	0	0	2
1.2800E+02	3.5000E+01	3.8640E-02	-7.0050E+01	-1.2040E+02	0	0	0	0'	0	1
1.2810E+02	3.9926E+01	1.2822E+00	-1.0554E+01	1.2102E+02	0	0	0	0	0	2
1.2950E+02	3.5000E+01	7.80203-01	2.4770E+01	9.0670E+01	0	0	0	0	0	1
1.2989E+02	4.0270E+01	1.4125E+00	7.0573E+00	7.9870E-01	0	0	0	0	0	2
1.3113E+02	3.3045E+01	1.6652E+00	1.6042E+02	-7.7248E+01	0	0	0	0	0	2
1.3140E+02	3.2767E+01	1.2527E+00	-2.7152E+02	-6.6312E+01	0	0	0	0	0	1
1.3210E+02	3.5000E+01	2.2880E-01	-1.4330E+02	5.1830E+01	0	0	0	0	0	2
1.3220E+02	3.8918E+01	1.8479E+00	2.2333E+02	1.0900E+02	0	0'	0	0	0	1
1.3267E+02	3.8745E+01	1.6056E+00	-3.7611E+01	1.2119E+02	0	0	0	0'	0	2
1.3310E+02	3.5000E+01	7.0270E-01	-8.6900E+01	-7.9810E+01	0	0	0	0	0	1
1.3359E+02	3.6031E+01	4.0760E+00	2.7329E+01	8.8694E+00	0	0	0	0	0	2
1.3495E+02	3.0957E+01	2.3347E+00	3.2640E+02	-9.0458E+00	0	0	0	0	0	2
1.3516E+02	3.5262E+01	2.3106E+00	7.8534E+00	2.6148E+02	0	0	0	0	0	2
1.3547E+02	3.0222E+01	3.2148E+00	1.4478E+01	2.5137E+02	0	0	0	0	0	1
1.3580E+02	3.5000E+01	4.1310E-03	-4.4230E+02	4.0040E+01	0	0	0	0	0	1
1.3626E+02	4.6985E+01	2.8595E+00	-5.5433E+00	1.3540E+01	0	0	0	0	0	2
1.3749E+02	3.3515E+01	2.5370E+00	2.7654E+01	4.4109E+00	0	0	0	0	0	2
1.3850E+02	3.5000E+01	l-95503-02	5.2450E+02	3.3890E+02	0	0	0	0	0	2
1.3910E+02	3.5000E+01	5.79103-01	1.8120E+01	2.7350E+01	0	0	0	0	0	1
1.3980E+02	3.5000E+01	3.5450E-03	-2.3180E+02	-5.9280E+01	0'	0	0	0	0	2
1.4004E+02	3.8632E+01	8.9526E-01	-2.8967E+02	5.71913-01	0'	0	0	0	0	i
1.4030E+02	3.5000E+01	3.80903-01	5.1900E+00	7.5580E+01	0	0	0	0	0	2

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1.4100E+02 3.5000E+01 3.3790E-02-1.3480E+02 6.7040E+01 0 0 0 0 0 2
1.4178E+02 4.8758E+01 2.0905E+00 4.5343E+01-8.4717E+01 0 0 0 0 0 1
1.4210E+02 3.4360E+01 3.2086E+00 3.0974E+01 6.2168E+00 0 0 0 0 0 2
1.4249E+02 3.5000E+01 6.2180E-01-2.7306E+02 4.7907E+02 0 0 0 0 0 1
1.4277E+02 3.5000E+01 4.1227E-03 2.0385E+02-3.6239E+02 0 0-0 6 0 2
1.4383E+02 3.5000E+01 1.5627E-02 6.3733E+02-8.8379E+01 0 0 0 0 0 1
1.4438E+02 3.5000E+01 1.1688E-01-3.2454E+02-1.8784E+02 0 0 0 0 0 2
1.4553E+02 3.9010E+01 4.3835E+00 1.1188E+01-6.6269E+01 0 0 0 0 0 1
1.4575E+02 4.0978E+01 1.7675E+00 3.4684E+02-1.7532E-01 0 0 0 6 0 2
1.4588E+02 3.5000E+01 2.4691E-03-3.0822E+02-1.4694E+00 0'6' 6 0 0 2
1.4697E+02 3.5000E+01 6.4329E-03 3.3465E+02-1.5992E+02 0 0-0 0 0 2
1.4731E+02 3.9427E+01 2.9184E+00 4.4365E+01 2.5575E+01 0 0 0 0 0 1
1.4780E+02 3.5000E+01 2.7180E-03 4.5320E+01-1.4630E+02 0 0 0 0 0 1
1.4873E+02 3.5000E+01 5.0062E-02 3.2797E+01 1.1876E+02 0 0 0 0 0 2
1.4899E+02 3.8832E+01 3.9259E+00 1.9351E+02 5.9921E+01 0 0 0 0 0 1
1.4930E+02 3.5010E+01 3.9331E-01-3.1138E+01 2.0174E-01 0 0 0 0 0 1
1.4993E+02 4.4042E+01 1.6196E+00-1.7333E+02-1.8660E+01 0 0 0 '6 0 2
1.5041E+02 3.5942E+01 3.2857E-01 2.7657E+00-3.7099E+01 0 0 0 0 0 2
1.5098E+02 3.6047E+01 1.12263-01 5.5424E+01-1.2906E+01 0 0 0 0 0 2
1.5132E+02 3.5097E+01 2.0705E-01-3.7513E+02 3.3981E+02 0 0 0 0 0 1
1.5163E+02 3.5835E+01 7.3989E-01-2.2337E+00-4.4869E+00 0 0 0 0 0 2
1.5251E+02 3.5000E+01 3.0431E-02-9.3293E+01 3.6939E+01 0 0 0 0 0 1
1.5251E+02 3.5000E+01 4.1600E-02 7.0177E+01-1.4623E+02 0 0 0 0 0 2
1.5337E+02 3.6896E+01 3.9866E+00 2.0817E+01 5.2935E+01 0 0 0 0 0 2
1.5410E+02 3.5000E+01 5.0968E-02-7.1077E+00-2.2758E+02 0 0 0 0 0 1
1.5430E+02 3.5000E+01 2.1096E-02 3.8558E+01 2.8105E+00 0 0 0 0 0 2
1.5477E+02 3.7049E+01 1.0903E00-3.3770E+01 3.9803E+01 0 0 0 0 0 2
1.5527E+02 3.7355E+01 8.3358E-01-1.5521E+02 1.1507E+02 0 0 0 0 0 1
1.5557E+02 3.7504E+01 1.1578E+00-1.3513E+01 1.0157E+00 0 0 0 0 0 2
1.5615E+02 3.5057E+01 1.7278E+00 1.1123E+01 8.5584E+00 0 0 0 0 0 1
1.5678E+02 3.5368E+01 3.1553E+00 1.0545E+01-2.6869E+01 0 0 0 0 0 2
1.5743E+02 3.6750E+01 8.4588E-01 1.8298E+01 1.2134E+00 0 0 0 0 0 1
1.5770E+02 3.5000E+01 2.6270E-04-8.1540E+02-5.1930E+02 0 0 0 0 0 2
1.5851E+02 4.1542E+01 1.5284E+00 1.6186E+02 8.7832E+01 0 0 0 0 0 1
1.5860E+02 3.5000E+01 1.5075E-02-7.1123E+01-4.7946E+01 0 0 0 0 0 2
1.5932E+02 3.9709E+01 2.1844E+00-2.4609E+02-5.2705E+02 0 0 0 0 0 2
1.5989E+02 3.5000E+01 7.5192E-01 2.4014E+00 5.9249E-01 0 0 0 0 0 1
1.6090E+02 3.5000E+01 9.9260E-03 5.5700E+02-2.4520E+01 0 0 0 0 0 2
1.6093E+02 3.6434E+01 7.0994E+00-1.4140E+01-5.7185E-01 0 0 0 0 0 1
1.6146E+02 3.5000E+01 3.7496E-02 1.5721E+02 5.3231E+01 0 0 0 0 0 2
1.6225E+02 3.5000E+01 3.0652E-01 3.1744E+02 1.3954E+02 0 0 0 0 0 1
1.6250E+02 3.5000E+01 9.8540E-03 9.2900E+00 1.3710E+01 0 0 0 0 0 2
1.6262E+02 3.5098E+01 1.3161E+00 9.4189E+01-3.9854E+02 0 0 0 0 0 1
1.6363E+02 3.9090E+01 4.2636E+00-2.7870E+01-1.5195E+02 0 0 0 0 0 2
1.6491E+02 3.5000E+01 1.5334E-01 3.2771E+02-8.3596E+01 0 0 0 0 0 2
1.6562E+02 4.2457E+01 3.0044E+00-4.2923E+01-4.0842E-01 0 0 0 0 0 2
1.6622E+02 3.6819E+01 3.1007E+00-4.6310E+01 2.4551E+02 0 0 0 0 0 1
1.6717E+02 3.5000E+01 7.3537E-03 3.8097E+01 2.0987E+01 0 0 0 0 0 2
1.6799E+02 3.8841E+01 3.8222E+00-7.2935E+00-3.2778E+02 0 0 0 0 0 2
1.6850E+02 3.5000E+01 4.3534E-01 1.1380E-01 1.3025E+01 0 0 0 0 0 1
1.6889E+02 3.5000E+01 1.5206E-02 2.6362E+01-1.3851E+00 0 0 0 0 0 2
1.6936E+02 3.5704E+01 2.5758E+00-8.3719E+01-1.3694E+02 0 0 0 0 0 1
1.6950E+02 3.5000E+01 1.1275E-02-4.5425E+00-7.4745E+00 0 0 0 0 0 2
1.7039E+02 3.6421E+01 9.2955E-01-5.5599E+01-3.5190E+01 0 0 0 0 0 2
1.7080E+02 3.5000E+01 7.5791E-02-3.5711E+01-4.0139E+01 0 0 0 0 0 2
1.7119E+02 3.5000E+01 1.8664E-02 8.3357E+01 1.7592E+01 0 0 0 0 0 1
1.7123E+02 3.5000E+01 1.8739E-01-2.6479E+02-2.2065E+02 0 0 0 0 0 2
1.7172E+02 3.4982E+01 1.2475E+00 9.7414E-01-2.5575E+01 0 0 0 0 0 1
1.7217E+02 3.5000E+01 6.0271E-02 3.3308E+01-8.5378E+01 0 0 0 0 0 2
1.7325E+02 3.5000E+01 1.8806E-01 1.9648E+02-1.5871E+02 0 0 0 0 0 2
1.7401E+02 4.1127E+01 1.8436E+00 1.6341E+02-1.5100E+01 0 0 0 0 0 2
1.7453E+02 3.5863E+01 3.8948E+00 1.4456E+02-7.4472E+00 0 0 0 0 0 1
1.7459E+02 3.5000E+01 9.6292E-02 2.2368E+02-1.3042E+02 0 0 0 0 0 2
1.7497E+02 3.6151E+01 1.1140E+00-8.0623E+00-5.7686E+01 0 0 0 0 0 1
1.7523E+02 3.5000E+01 1.0790E-01-4.7840E+01-7.5667E+01 0 0 0 0 0 2
1.7571E+02 3.5000E+01 3.7137E-02-5.0264E+01-8.6669E+01 0 0 0 0 0 1
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1.7656E+02	3.8712E+01	3.9387E+00	1.3793E+00	5.7789E+02	0	0	0	0	0	2
1.7750E+02	2.9825E+01	6.7910E+00	-6.2747E+01	1.6946E+01	0	0	0	0	0	2
1.7755E+02	3.6991E+01	3.3655E+00	2.6279E+01	6.3525E+01	0	0	0	0	0	1
1.7856E+02	3.5521E+01	2.9477E+00	-1.3924E+01	8.85933-01	0	0	0	0	0	2
1.7942E+02	3.1966E+01	1.7765E+00	-7.7173E+00	7.97803-03	0	0	0	0	0	2
1.8030E+02	4.7134E+01	3.7599E+00	-4.4058E+01	-4.9881E+01	0	0	0	0	0	2
1.8048E+02	3.5000E+01	3.0919E-02	-4.5513E+01	2.3536E+02	0	0	0	0	0	1
1.8120E+02	3.5000E+01	4.6714E-01	-2.9118E+00	1.0112E+02	0	0	0	0	0	2
1.8160E+02	3.5000E+01	8.2260E-03	-1.4170E+01	-1.0510E+02	0	0	0	0	0	2
1.8180E+02	3.5000E+01	9.73403-03	6.4200E+01	6.6580E+00	0	0	0	0	0	2
1.8203E+02	3.5733E+01	2.4440E+00	2.0582E+02	-1.1695E+02	0	0	0	0	0	1
1.8227E+02	4.1560E+01	2.6226E+00	2.4212E+01	-6.7232E-02	0	0	0	0	0	1
1.8319E+02	3.5000E+01	5.53833-01	1.2160E+02	1.5677E+02	0	0	0	0	0	2
1.8390E+02	3.5000E+01	9.72503-03	1.2150E+01	1.0450E+00	0	0	0	0	0	2
1.8405E+02	4.2949E+01	9.43043-01	6.2584E-01	-9.4828E+00	0	0	0	0	0	1
1.8510E+02	3.5000E+01	5.2280E-04	-1.7100E+01	-2.5910E+01	0	0	0	0	0	2
1.8566E+02	3.5000E+01	5.0082E-01	-8.0466E+00	1.4814E+01	0	0	0	0	0	2
1.8664E+02	3.2941E+01	9.5410E-01	-4.2282E+02	-5.1241E+01	0	0	0	0	0	2
1.8732E+02	3.5000E+01	5.02313-02	3.7404E+01	4.6581E+01	0	0	0	0	0	1
1.8770E+02	3.5000E+01	2.36253-01	6.8353E+01	-3.5880E+02	0	0	0	0	0	1
1.8858E+02	3.5000E+01	7.25973-02	6.9343E+00	-2.7802E+01	0	0	0	0	0	2
1.8891E+02	3.5000E+01	2.0134E-01	-4.7899E+00	-5.9981E+00	0	0	0	0	0	1
1.8948E+02	3.4568E+01	5.4167E+00	1.5096E+01	-2.1669E+01	0	0	0	0	0	1
1.8963E+02	3.5000E+01	2.18553-01	2.1645E+01	2.8203E+02	0	0	0	0	0	2
1.8991E+02	3.5000E+01	5.70563-01	4.1668E+01	1.1165E+02	0	0	0	0	0	1
1.9100E+02	3.5000E+01	4.1970E-02	-1.1130E+02	-1.1340E+01	0	0	0	0	0	2
1.9140E+02	3.5000E+01	5.11903-02	2.4090E+01	7.5910E+01	0	0	0	0	0	2
1.9230E+02	3.5000E+01	7.45303-01	1.0440E+02	-9.4790E+01	0	0	0	0	0	2
1.9230E+02	3.5435E+01	8.7060E+00	-1.7940E+01	4.7530E+01	0	0	0	0	0	1
1.9300E+02	3.5000E+01	2.9730E-03	-5.0210E+02	6.0180E+01	0	0	0	0	0	1
1.9355E+02	3.5000E+01	5.31543-02	1.8510E+02	1.5576E+02	0	0	0	0	0	2
1.9360E+02	3.5000E+01	4.5580E-02	-5.6610E+01	1.3510E+02	0	0	0	0	0	1
1.9424E+02	4.0371E+01	2.7966E+00	-1.1457E+02	-1.1947E+02	0	0	0	0	0	2
1.9495E+02	3.5000E+01	3.74313-01	5.7818E+00	-1.6078E+00	0	0	0	0	0	2
1.9577E+02	3.5000E+01	3.1592E-02	-1.4752E+02	1.1671E+02	0	0	0	0	0	2
1.9615E+02	3.5000E+01	2.0446E-01	-6.2788E+01	1.3617E+02	0	0	0	0	0	1
1.9656E+02	3.5000E+01	1.43823-01	2.0702E+02	-2.2238E+01	0	0	0	0	0	2
1.9715E+02	3.2491E+01	1.1762E+00	-1.1284E+01	7.0758E+00	0	0	0	0	0	1
1.9750E+02	3.5000E+01	5.95703-01	4.4730E+00	1.1180E+02	0	0	0	0	0	2
1.9820E+02	3.5000E+01	6.5060E-02	1.9580E+02	1.0140E+02	0	0	0	0	0	1
1.9841E+02	3.3041E+01	1.7629E+00	-1.8369E+02	-1.3273E+02	0	0	b--O	0	2	
1.9882E+02	2.9762E+01	4.0365E+00	3.0996E+01	-4.3349E+02	0	0	0	0	0	1
2.0008E+02	3.5000E+01	1.57743-03	1.9409E+01	3.3430E+02	0	0	0	0	0	2
2.0022E+02	3.5000E+01	1.0829E-01	8.2632E+01	7.5557E+01	0	0	0	0	0	1
2.0032E+02	4.3513E+01	1.0243E+01	2.2073E+01	-3.0668E+02	0	0	0	0	0	2
2.0189E+02	3.4009E+01	2.2033E+00	5.13473-03	2.9504E+01	0	0	0	0	0	2
2.0315E+02	3.5000E+01	4.98453-01	1.1298E+01	-3.9875E+01	0	0	0	0	0	1
2.0330E+02	3.5000E+01	5.6710E-03	-6.7520E+00	1.2810E+01	0	0	0	0	0	2
2.0370E+02	3.4676E+01	2.7804E+00	-1.6754E+01	-1.8556E+02	0	0	0	0	0	2
2.0400E+02	4.3662E+01	9.72703-01	3.4190E+01	-6.0270E+01	0	0	0	0	0	1
2.0490E+02	3.5000E+01	1.25603-01	2.5680E+01	-8.2890E+01	0	0	0	0	0	2
2.0570E+02	4.0659E+01	1.0080E+00	3.7170E+00	-2.6380E+01	0	0	0	0	0	2
2.0590E+02	3.5000E+01	1.8660E-01	9.2420E+01	-8.7180E+01	0	0	0	0	0	1
2.0660E+02	3.5000E+01	4.32403-02	4.5340E+00	-6.3870E+01	0	0	0	0	0	2
2.0700E+02	3.5331E+01	4.5420E+00	6.2360E+00	-1.5050E+02	0	0	0	0	0	2
2.0720E+02	3.5000E+01	7.7790E-03	2.9190E+02	-2.5090E+01	0	0	0	0	0	2
2.0840E+02	3.5000E+01	7.57603-02	3.0460E+02	4.0310E+01	0	0	0	0	0	1
2.0900E+02	3.5000E+01	2.9860E-01	-2.3380E+00	3.7180E-01	6	0	0	0	0	2
2.0960E+02	3.4355E+01	6.1870E+00	3.0610E+00	5.2880E-02	0	0	0	0	0	2
2.1060E+02	4.2230E+01	1.7840E+00	-9.9110E+01	-6.5070E+01	0	0	0	0	0	1
2.1090E+02	3.5000E+01	1.0000E-02	2.0080E+00	-4.9810E+00	0	0	0	0	0	2
2.1140E+02	4.1824E+01	2.4640E+00	3.2210E+01	2.4590E+00	0	0	0	0	0	2
2.1200E+02	3.5000E+01	2.84203-01	9.7940E+01	-1.6500E+01	0	0	0	0	0	1
2.1220E+02	3.5000E+01	1.65703-01	2.6590E+01	1.9470E+01	0	0	0	0	0	1
2.1270E+02	3.5000E+01	7.49103-01	6.3910E+01	-1.8910E+02	0	0	0	0	0	2
2.1320E+02	3.5000E+01	9.08503-03	1.0650E+01	1.7000E+01	0	0	0	0	0	2

2.1360E+02	3.4126E+01	6.6940E+00	1.44503-01	1.4370E+02	0 0 0 0 0 1
2.1380E+02	4.6241E+01	1.7890E+00	-2.9390E+00	-3.5740E+02	0 0 0 0 0 2
2.1490E+02	3.5000E+01	2.78303-01	1.5960E+02	-9.1950E+01	0 0 0 0 0 1
2.1520E+02	3.5000E+01	6.93703-01	4.6780E+01	-6.4890E+02	0'0 0 0 0 2
2.1570E+02	3.5000E+01	2.57303-01	4.9450E+02	-1.2100E+01	0 0 0 0 0 1
2.1620E+02	3.5000E+01	1.0010E-02	-1.5280E+00	4.2970E-02	0 0 0 0 b-2'
2.1660E+02	3.5000E+01	3.63403-01	7.1790E+00	-1.8900E+02	0 0 0 0 0 1
2.1710E+02	3.5367E+01	2.6980E+00	6.4750E+01	-1.4920E+02	0 0 0 0 0 2'
2.1750E+02	3.5000E+01	1.0170E-02	-3.9170E+01	1.1370E+02	0 0 0 0 d-2'
2.1810E+02	3.5000E+01	6.15503-01	1.2230E+02	-2.4960E+02	0 0 0 0 0 1
2.1890E+02	3.5000E+01	4.1550E-01	1.7120E+02	-3.0180E+02	0 0 0 0 0 2
2.1940E+02	3.5000E+01	1.3000E-02	9.4790E+01	8.2700E+01	0 0 0 0 0 2
2.1967E+02	3.5000E+01	3.2614E-01	2.8743E+02	-8.9746E+01	0 0 0 0 0 1
2.2027E+02	3.2916E+01	1.7377E+00	5.9919E+00	-2.9995E+01	0 0 0 0 0 2
2.2069E+02	3.9437E+01	1.0411E+01	3.4453E+02	1.0121E+02	0 0-0 0 0 1
2.2150E+02	3.4815E+01	4.5310E+00	5.9355E+02	-7.7393E+00	0 0 0 0 0 2
2.2179E+02	3.7863E+01	3.2623E+00	2.4265E+02	6.1156E+01	0 0 0 6 0 1
2.2260E+02	3.5000E+01	3.0630E-03	-4.3940E+00	1.1770E+00	0'0'0 0 0 2
2.2316E+02	3.0678E+01	4.9436E+00	9.2480E+01	-3.6595E-01	0 0'0 0 0 2
2.2358E+02	3.8189E+01	1.4625E+00	1.5007E+01	9.3327E+01	0 0 0 0 O-2
2.2459E+02	3.6093E+01	1.1814E+01	2.3561E+01	2.7362E+00	0 0 0 0 0 1
2.2503E+02	3.5364E+01	4.3798E+00	4.6216E+01	-3.9344E+01	0 0 0 0 0 2
2.2525E+02	3.8145E+01	8.31603-01	7.8592E+00	6.4542E+00	0'0 0 0 0 1
2.2546E+02	3.5000E+01	2.6564E-01	-3.1231E+02	4.7264E+02	0 0 0 0 0 2
2.2640E+02	3.7391E+01	5.3517E+00	1.2645E+00	7.0075E+00	0 0 0 0' 0 1
2.2647E+02	3.5000E+01	1.0095E-01	1.8494E+02	-1.2128E+02	0 0-0 0 0 2
2.2695E+02	3.4105E+01	3.9950E+00	2.5577E+02	-5.5994E+02	0 0 0 0 0 2
2.2877E+02	3.7175E+01	1.5796E+00	9.6333E+01	4.3854E+01	0 0 6 6 0 1
2.2917E+02	3.2995E+01	1.1464E+00	1.7778E+01	-8.2097E+00	0 0 0 0 0 2
2 .2939E+02	3. 6714E+01	1.4913E+00	4. 4215E+01	-1.4695E+02	0 0 0 0 0 1
2.2960E+02	3.5000E+01	6.3790E-04	4.3830E+01	-9.6970E+01	0 0 0 0 0 2
2.3057E+02	3.5000E+01	8.7173E-03	6.2906E+00	-1.9062E+01	0 0 0 0 0 2
2 .3092E+02	3.8137E+01	1.1317E+01	1. 0956E+00	-1.9313E+01	0 0 0 0 0 1
2.3150E+02	3.7130E+01	8.0666E+00	3.1087E+02	1.5645E+00	0 0 0 0 0 2
2.3292E+02	3.1996E+01	4.4259E+00	5.7520E-01	1.1001E+02	0 0 0 0 0 2
2.3306E+02	4.0020E+01	1.0473E+00	4.7593E+02	-1.7164E+02	0 0 0 0 0 1
2.3362E+02	3.5000E+01	2.1289E-02	3.0645E+01	-5.6083E+01	0 0 0 0 0 2
2.3391E+02	3.7253E+01	4.0522E+00	1.1502E+02	-8.0315E+01	0 0 0 0 0 1
2.3409E+02	3.7678E+01	9.3831E-01	-1.4355E+02	-6.4548E+01	0 0 0 0' 2
2.3520E+02	3.5000E+01	4.6256E-01	5.4796E+01	-7.0845E+00	0 0 0 0 0 1
2.3614E+02	3.5000E+01	2.7965E-03	9.2043E+01	-7.4626E+01	0 0 0 0 0 2
2.3675E+02	3.4552E+01	1.5674E+00	1.8049E+01	-6.0003E+00	0 0 0 0 0 1
2.3719E+02	3.5000E+01	9.34213-03	2.1860E+02	-1.6826E+02	0 0 0 0 0 2
2 .3785E+02	3.5000E+01	2 .7353E-02	8.3806E+01	2.0187E+02	0 0 0 0 0 2
2.3813E+02	3.0077E+01	1.0936E+00	1.5195E+02	-2.1572E+02	0 0 0 0 0 1
2.3869E+02	3.4045E+01	1.1289E+00	2.7601E+02	-2.5563E+02	0 0 0 0 0 2
2.3913E+02	3.3866E+01	1.6952E+00	2.3177E+02	-1.9898E+00	0 0 0 0 0 1
2.3938E+02	3.2161E+01	3.9612E+00	3.9311E+02	4.1018E+02	0 0 0 0 0 1
2.3971E+02	3.5000E+01	8.7905E-03	3.3608E+01	5.5137E+02	0 0 0 0 0 2
2.4079E+02	3.5000E+01	4.3396E-02	6.0247E+00	-2.1357E+02	0 0 0 0 0 2
2.4118E+02	3.4497E+01	8.2361E+00	1.0716E+02	-3.2698E+02	0 0 0 0 0 2
2.4201E+02	3.5000E+01	6.2334E-02	-6.0366E+00	3.5686E+01	0 0 0 0 0 2
2.4280E+02	3.2918E+01	3.3262E+00	-3.4173E+02	-4.2002E+02	0 0 0 0 0 1
2.4319E+02	3.5000E+01	4.1730E-01	-1.9802E+02	7.1254E+00	0 0 0 0 0 2
2 .4361E+02	3.5000E+01	4.0957E-01	2.7301E+01	-1.0693E+02	0 0 0 0 0 1
2.4439E+02	3.5000E+01	6.3496E-01	4.0278E+02	2.2858E+01	0 0 0 0 0 2
2.4545E+02	3.2782E+01	2 .7901E+00	3.3584E+01	-1.7354E+02	0 0 0 0 0 2
2.4631E+02	3.8859E+01	3.7827E+00	-6.3028E+01	-3.5786E+02	0 0 0 0 0 1
2.4653E+02	3.5000E+01	2.14783-02	2.5371E+02	2.6133E-01	0 0 0 0 0 2
2.4711E+02	3.5000E+01	7.5238E-03	1.4907E+02	7.8321E+01	0 0 0 0 0 2
2.4781E+02	3.8325E+01	5.3750E+00	2.3370E+00	-2.9055E+01	0 0 0 0 0 2
2.4796E+02	3.4772E+01	1.5816E+00	-3.0020E+02	-2.7022E+02	0 0 0 0 0 1
2.4870E+02	3.5000E+01	2.42203-02	3.2915E+02	-4.6286E+02	0 0 0 0 0 2
2.4876E+02	3.5000E+01	5.3843E-01	2.2828E+02	3.6481E+01	0 0 0 0 0 1
2.4900E+02	3.2352E+01	5.3846E+00	1.9992E+02	-1.8002E+02	0 0 0 0 0 2
2.4980E+02	3 [illegible]	6.0040E-02	7.6360E+01	-7.8890E+01	0 0 0 0 0 1

2.5050E+02	3.5000E+01	9.98403-03	1.3750E+00	7.0560E+00	0	0	0	0	0	2
2.5154E+02	3.5710E+01	2.6134E+00	3.7563E+02	-1.2271E+02	0	0	0	0	0	2
2.5258E+02	3.5000E+01	1.0416E-02	-1.9353E+01	-7.0271E+02	0	0	0	0	0	1
2.5283E+02	3.5846E+01	3.2570E+00	-2.8090E+01	-2.9899E+02	0	0	0	0	0	2
2.5314E+02	3.5000E+01	8.7890E-03	-1.0945E+00	1.4753E+02	0	0	0	0	0	2
2.5366E+02	3.6322E+01	9.5701E+00	4.0419E+02	-2.4330E+02	0	0	0	0	0	1
2.5429E+02	3.5000E+01	8.9906E-02	-6.8774E+01	1.6234E+01	0	0	0	0	0	2
2.5490E+02	3.5000E+01	1.0040E-02	-3.5130E+00	8.83503-01	0	0	0	0	0	1
2.5544E+02	3.5000E+01	7.0826E-02	-4.2638E+01	3.1652E+01	0	0	0	0	0	2
2.5596E+02	3.8855E+01	6.0754E+00	8.7829E+01	-2.4222E+02	0	0	0	0	0	2
2.5605E+02	3.5000E+01	6.3145E-03	2.2343E+00	-1.1658E+02	0	0	0	0	0	2
2.5740E+02	3.5000E+01	4.3000E-01	1.9270E+01	-8.0550E+01	0	0	0	0	0	1
2.5780E+02	3.5000E+01	9.9610E-03	-7.3570E-01	-2.9490E-01	0	0	0	0	0	2
2.5790E+02	3.5000E+01	9.98303-03	1.4340E+01	2.0210E+00	0	0	0	0	0	1
2.5810E+02	3.5000E+01	1.0010E-02	5.3120E+00	2.8560E+00	0	0	0	0	0	1
2.5850E+02	3.5000E+01	2.7360E-01	6.9550E+01	-5.9200E+01	0	0	0	0	0	2
2.5860E+02	3.5000E+01	3.05503-01	5.7030E+01	-3.7970E+01	0	0	0	0	0	2
2.5990E+02	3.6154E+01	3.5860E+00	7.4240E+01	-2.6690E+02	0	0	0	0	0	2
2.6009E+02	3.5000E+01	4.1443E-04	4.8173E+02	-4.1803E+02	0	0	0	0	0	1
2.6090E+02	3.6199E+01	5.8521E+00	2.8219E+02	1.9202E+02	0	0	0	0	0	2
2.6103E+02	3.5000E+01	4.9022E-03	-3.6361E+02	-9.9897E+01	0	0	0	0	0	2
2.6166E+02	3.4705E+01	2.0660E+01	1.2569E+02	-2.6742E+01	0	0	0	0	0	1
2.6234E+02	3.9615E+01	2.6762E+00	9.6951E+01	-1.9754E+02	0	0	0	0	0	2
2.6341E+02	3.5000E+01	3.7613E-01	-2.4390E-01	2.9115E+02	0	0	0	0	0	1
2.6350E+02	3.5000E+01	2.24103-01	1.3970E+02	-1.5560E+01	0	0	0	0	0	2
2.6467E+02	3.5203E+01	1.4315E+00	-2.8558E+00	6.8164E+00	0	0	0	0	0	2
2.6521E+02	3.5000E+01	1.1626E-02	-1.5882E+02	4.8905E+02	0	0	0	0	0	1
2.6593E+02	3.5083E+01	3.2224E+00	3.0003E+02	-4.4450E+02	0	0	0	0	0	2
2.6643E+02	3.8663E+01	7.8358E+00	3.4232E+02	2.5286E+01	0	0	0	0	0	1
2.6678E+02	3.5000E+01	1.05153-02	2.3283E-01	-2.0506E-02	0	0	0	0	0	2
2.6718E+02	3.5000E+01	3.7363E-01	4.2808E+01	-1.6623E-01	0	0	0	0	0	1
2.6757E+02	3.5000E+01	4.4436E-06	1.0424E+02	8.3442E+01	0	0'	0	0	0	2
2.6779E+02	3.2369E+01	3.4625E+00	1.2720E+02	-6.1043E+02	0	0	0	0	0	2
2.6780E+02	3.5000E+01	9.9870E-03	-5.5370E+00	2.5710E+00	0'	0	0	0	0	1
2.6814E+02	3.8990E+01	1.9010E+00	6.2637E+01	-2.3497E+01	0	0	0	0	0	2
2.6942E+02	3.6275E+01	2.7306E+00	2.9280E+02	-9.6209E+01	0	0	0	0	0	1
2.6975E+02	3.5000E+01	2.04023-01	1.2823E+01	5.95593-01	0	0	0	0	0	2
2.7004E+02	4.0844E+01	6.5810E+00	-6.4516E+01	-2.1795E+02	0	0	0	0	0	1
2.7088E+02	4.0683E+01	4.3205E+00	-2.4013E+02	-7.2179E+01	0	0	6	0	0	2
2.7182E+02	3.5000E+01	3.1641E-03	3.3960E+02	1.1185E+02	0	0	0	0	0	2
2.7258E+02	3.5000E+01	1.25303-03	2.9743E+00	2.2469E+02	0	0	0	0	0	2
2.7261E+02	3.9100E+01	1.5472E+01	-3.1757E+01	-1.1389E+02	0	0	0	0	0	2
2.7322E+02	5.0174E+01	5.8093E+00	6.2832E+02	-1.6442E-01	0	0	0	0	0	1
2.7380E+02	3.5000E+01	1.0060E-02	5.9530E+01	4.4050E+01	0	0	0'	0	0	2
2.7494E+02	3.4946E+01	1.3174E+00	8.3888E+01	-4.8173E+01	0	0	0	0	0	1
2.7570E+02	3.5000E+01	9.9940E-03	1.7260E+01	1.73303-01	0	0	0	0	0	2
2.7630E+02	3.5000E+01	9.9900E-03	-8.8320E+00	1.5230E+01	0	0	0	0	0	2
2.7640E+02	3.5000E+01	6.4180E-03	-2.0460E+00	-1.5480E+02	0	0	0	0	0	1
2.7678E+02	3.1668E+01	1.0863E+01	-1.4448E+02	1.0554E+01	0	0	0	0	0	2
2.7698E+02	3.5000E+01	4.4870E-01	-8.9969E+01	-4.2411E+01	0	0'	0	0	0	1
2.7787E+02	3.5000E+01	7.8603E-01	-2.2386E+01	5.6743E+00	0	0	'a'	0	0	2'
2.7873E+02	3.7755E+01	9.6357E-01	-1.7245E+01	8.3204E+01	0	0	0	0	0	1
2.7890E+02	3.5000E+01	9.7120E-03	1.9930E+00	2.8670E+00	0	0	0	0	0	2
2.7970E+02	3.5000E+01	9.9980E-03	-6.7390E-04	1.0010E+01	0	0	0	0	0	2
2.7983E+02	3.1910E+01	1.2415E+01	5.3489E+02	-2.2222E+02	0'	0	0	0	0	1
2.8037E+02	3.2959E+01	1.3600E+00	-1.7029E+02	-1.7813E+02	0	0'	0	0	0	2
2.8063E+02	3.9142E+01	1.0469E+00	1.8268E+02	-1.5694E+02	0	0	0	0	0	1
2.8153E+02	3.5000E+01	l-12893-01	9.9431E-01	-8.4806E+00	0	0	0	0	0	1
2.8156E+02	3.8453E+01	8.0959E-01	-8.8121E+01	4.6435E-01	0	0	0	0	0	2
2.8340E+02	3.5000E+01	3.2390E-03	4.3870E+01	-7.6280E+01	0	0	0	0	0	2
2.8350E+02	3.5000E+01	5.71103-03	2.9260E+02	-1.8330E+02	0	0	0	0	0	2
2.8400E+02	3.5000E+01	1.7170E-01	1.6870E+02	-2.3870E+02	0	0	0	0	0	1
2.8480E+02	3.5000E+01	4.04003-02	4.8530E+01	-2.5240E+02	0	0	0	0	0	2
2.8490E+02	3.5000E+01	4.2620E-02	-2.8420E+02	-7.6000E+02	0	0	0	0	0	2
2.8540E+02	3.5000E+01	6.65903-01	1.8680E+02	-1.7950E+02	0	0	0	0	0	1
2.8552E+02	3.4217E+01	2.4210E+00	3.5383E+02	-1.3231E+02	0	0	0	0	0	1

2.8580E+02	3.5000E+01	2.9280E-03	4.6100E+02	8.1990E+01	0	0	0	0	0	2
2.8603E+02	3.5000E+01	3.4025E-01	-3.0204E+01	-1.2179E+02	0	0	0	0	0	1
2.8650E+02	3.5000E+01	2.1400E-02	-1.4000E+02	-4.0410E+02	0	0	0	0	0	'2"
2.8747E+02	3.2943E+01	3.5931E+00	1.0311E+02	-2.1700E+02	0	0	0	0	0	2
2.8850E+02	3.5000E+01	9.9880E-03	1.7070E+00	-9.7690E-01	0	0	0	0	0	2
2.8924E+02	3.7864E+01	6.5759E+00	-1.6140E+02	-3.0322E+01	0	0	0	0	0	2
2.8972E+02	3.6185E+01	4.3589E+00	-1.2704E+02	-1.7157E+02	0	0	0	0	0	1
2.8990E+02	3.5000E+01	9.0670E-03	1.2610E+01	-6.6360E+01	0	0	0	0	0	2
2.9029E+02	3.5540E+01	3.5670E+00	1.2127E+02	-1.2280E+01	0	0	0	0	0	1
2.9080E+02	3.5000E+01	1.0020E-02	1.0410E+01	4.3480E+00	0	0	0	0	0	2
2.9117E+02	3.5000E+01	2.63513-01	1.3280E+02	-3.8704E+00	0	0	0	0	0	1
2.9221E+02	3.5822E+01	2.1970E+00	1.6197E+02	3.1610E+02	0	0	0	0	0	1
2.9310E+02	3.5000E+01	4.8330E-03	1.4560E+01	1.2920E+00	0	0	0	0	0	2
2.9352E+02	4.3587E+01	8.7010E-01	2.8428E-01	-8.4401E+01	0	0	0	0	0	2
2.9410E+02	3.5000E+01	2.6606E-02	-3.0413E+01	-3.9640E+02	0	0	0	0	0	2
2.9478E+02	3.5000E+01	4.2543E-02	3.0923E+00	-1.6280E+02	0	0	0	0	0	2
2.9532E+02	3.6735E+01	2.5645E+00	2.7166E+02	3.0094E+02	0	0	0	0	0	1
2.9549E+02	3.5000E+01	1.3746E-02	-5.3710E+01	-3.0075E+02	0	0	0	0	0	2
2.9604E+02	3.4494E+01	1.8042E+00	-7.1013E+01	-4.6221E+01	0	0	0	0	0	2
2.9619E+02	3.5000E+01	1.50213-02	9.1793E+00	-6.6394E-01	6'	6'	0	0	0	1
2.9731E+02	4.5536E+01	8.2574E-01	1.1771E+01	7.1860E+01	0	0	0	0	0	2
2.9775E+02	3.5000E+01	1.3033E-02	-4.7085E+02	-5.3307E+01	0	0	0	0	0	1
2.9820E+02	3.5000E+01	7.0764E-03	-4.0935E+01	-2.2025E+02	0	0	0	0	0	2
2.9848E+02	3.6168E+01	9.4691E+00	-1.4973E+01	-3.0149E+01	0	0	0	0	0	1
2.9887E+02	3.8250E+01	8.9267E-01	-4.1694E+01	1.9896E+01	0	0	0	0	0	2
2.9990E+02	3.5000E+01	8.1338E-02	-6.3074E+00	3.8398E+01	0	0	0	0	0	2
3.0043E+02	3.5000E+01	4.1643E-01	-1.0702E+02	-5.9232E+01	0	0	0	0	0	1
3.0053E+02	3.5000E+01	2.10873-01'	5.9712E+01	7.5934E+01	0	0	0	0	0	2
3.0107E+02	3.5000E+01	1.4097E-01	1.2860E+02	5.8701E+01	0	0	0	0	0	1
3.0173E+02	3.5000E+01	6.1205E-01	5.5025E+01	6.0741E+01	0	0	0	0	0	2
3.0251E+02	3.5000E+01	2.0716E-01	1.1592E+02	2.1482E+02	0	0	0	0	0	2
3.0274E+02	3.6606E+01	1.7505E+00	3.1257E+00	2.4072E+02	0	0	0	0	0	1
3.0342E+02	3.6587E+01	1.2029E+00	4.4454E+02	-7.6265E+01	0	0	0	0	0	2
3.0438E+02	3.5000E+01	4.0405E-01	2.0140E+02	-1.5560E+02	0	0	0	0	0	1
3.0474E+02	3.6202E+01	9.2463E-01	1.0640E+02	2.1558E+01	0	0	0	0	0	2
3.0506E+02	3.1737E+01	2.4266E+00	1.0383E+02	-2.6075E+02	0	0	0	0	0	2
3.0559E+02	3.9044E+01	1.7194E+00	1.6417E+02	1.8040E+01	0	0	0	0	0	1
3.0576E+02	3.5000E+01	2'2381E-01	2.3523E+02	3.7598E+02	0	0	0	0	0	2
3.0600E+02	3.5000E+01	5.4628E-01	9.0340E+01	-8.6580E-01	0	0	0	0	0	1
3.0660E+02	3.5000E+01	3. 6560E-01	1.2030E+02	-1.2070E+02	0	0	0	0	0	2
3.0710E+02	3.5000E+01	3.7910E-01	5.8540E+01	-2.8170E+01	0	0	0	0	0	1
3.0750E+02	3.5000E+01	4.5036E-01	6.3780E+01	1.9860E+00	0	0	0	0	0	2
3.0774E+02	3.2732E+01	1.1501E+00	1.0529E+02	-2.4596E+02	0	0	0	0	0	2
3.0858E+02	4.1644E+01	8.6440E-01	2 .2262E+02	-1.2149E+02	0	0	0	0	0	1
3.0894E+02	3.3358E+01	3.6079E+00	8.2603E+00	2.6397E+00	0	0	0	0	0	2
3.0979E+02	3.5000E+01	1.7984E-01	4.1472E+01	-9.5402E+01	0	0	0	0	0	1
3.1034E+02	3.5000E+01	2.3406E-01	3.6392E+01	1.6340E+01	0	0	0	0	0	2
3.1129E+02	3.2922E+01	1.2410E+00	6.0713E+01	-7.0367E+01	0	0	0	0	0	1
3.1151E+02	3.5000E+01	8.4691E-03	-2.6328E+01	-5.7294E+01	0	0	0	0	0	2
3.1232E+02	3.8766E+01	1.2522E+00	1.5414E+02	-1.1241E+02	0	0	0	0	0	2
3.1245E+02	3.8496E+01	1.3727E+00	9.1914E+01	-6.5192E+01	0	0	0	0	0	2
3.1318E+02	3.8675E+01	5.0124E+00	1.3744E+01	2.2415E+00	0	0	0	0	0	1
3.1354E+02	2.8504E+01	1.6085E+00	-3.5035E+01	1.2328E+02	0	0	0	0	0	2
3.1498E+02	3.5422E+01	1.2526E+00	7.0705E+01	-1.0457E+02	0	0	0	0	0	1
3.1504E+02	3.1636E+01	3.7909E+00	-1.8585E-01	6.9830E+01	0	0	0	0	0	2
3.1567E+02	3.6355E+01	3.3559E+00	1.0210E+02	-2.7347E+01	0	0	0	0	0	2
3.1601E+02	3.4835E+01	2.0040E+00	8.0234E+01	7.1140E+01	0	0	0	0	0	1
3.1622E+02	3.6607E+01	1.8776E+00	1.6599E+02	-2.3132E+02	0	0	0	0	0	2
3.1717E+02	3.0897E+01	1.4641E+00	2.7150E+01	1.0219E+02	0	0	0	0	0	1
3.1760E+02	3.2041E+01	9.0520E-01	2.2530E+01	-2.1260E+01	0	0	0	0	0	2
3.1868E+02	3.5000E+01	2.9458E-01	8.0783E+01	-1.0708E+02	0	0	0	0	0	2
3.1892E+02	3.9907E+01	8.0109E-01	1.0658E+02	-1.3101E+02	0	0	0	0	0	1
3.1939E+02	3.6627E+01	8.6224E-01	1.7132E+02	-2.4822E+02	0	0	0	0	0	2
3.1964E+02	4.6762E+01	3.3707E+00	9.8802E+01	-6.1846E+01	0	0	0	0	0	1
3.2114E+02	3.5000E+01	4.3115E-01	3.1634E+02	-1.0725E+01	0	0	0	0	0	2
3.2161E+02	3.5000E+01	2.4970E-01	1.7682E+01	-1.6902E+02	0	0	0	0	0	1

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3.2204E+02 8.7753E+01 7.0138E-01-9.4342E+01-6.4940E+00 0 0 0 0 0 2
3.2257E+02 2.8019E+01 2.9984E+00-1.4940E+00-2.0000E-01 0 0 0 0 0 2
3.2269E+02 2.1467E+01 7.7823E+00-3.8124E+02 3.0827E+02 0 0 0 0 0 1
3.2316E+02 3.5000E+01 6.2970E-01-2.2195E+01 2.4378E+01 0 0 0 0 0 2
3.2373E+02 2.6700E+01 5.9481E+00 8.9009E+00-2.7287E+01 0 0 0 0 0 1
3.2429E+02 4.1912E+01 6.7054E+00 3.9253E+01-7.1799E+01 0 0 0 0 0 2'
3.2505E+02 4.3233E+01 1.0014E+00-7.6605E+01 6.1214E+01 0 0 0 0 0 2
3.2534E+02 4.4162E+01 2.9151E+00 5.1182E+01-1.3506E+01 0 0 0 0 0 1
3.2596E+02 3.6556E+01 4.8440E+00-9.0259E+01 2.5713E+00 0 0 0 0 0 2
3.2715E+02 3.4869E+01 7.28013-01 3.9930E+02-1.9284E+02 0 0 0 0 0 1
3.2720E+02 3.1721E+01 4.2603E+00-1.2265E+01-1.9717E+00 0 0 0 0 0 2
3.2813E+02 3.5000E+01 1.4376E-01-1.3549E+01-4.9973E+02 0 0 0 0 0 2
3.2908E+02 3.1028E+01 3.7161E+00 7.3099E+01-1.5945E+02 0 0 0 0 0 1
3.2913E+02 3.5000E+01 1.7504E-01-1.2240E+02 3.9430E+01 0 0'0 0 0'2
3.3010E+02 3.5000E+01 3.11903-02 2.4350E+01 1.5270E+02 06 0 0 0 2
3.3064E+02 3.8230E+01 2.6501E+00 1.2925E+02-4.7067E+02 0 0'0 0 0 2
3.3150E+02 3.5000E+01 5.4796E-02 8.5312E+02 1.9521E+02 0 0 0 0 0 1
3.3180E+02 3.5000E+01 1.17803-02 9.5440E+01-1.0350E+02 0 0 0 0 0 2
3.3250E+02 3.7281E+01 4.5324E+00 5.2447E+01-9.9208E+01 0 0 0 0 0 1
3.3307E+02 3.5841E+01 7.8487E+00-6.5795E+00-1.4199E+01 0 0 0 0 0 2
3.3345E+02 3.7031E+01 1.3364E+00 1.0666E+02-1.1181E+02 0 0 0 0 0 1
3.3407E+02 4.0205E+01 5.7326E+00 2.0625E+02-1.0880E+02 0 0 0 0 0 2
3.3452E+02 3.5000E+01 1.70783-01 8.7383E+02 1.3728E+02 0 0 0 0 0 1
3.3531E+02 3.5000E+01 3.8442E-01 1.8272E+01 1.0502E+02 0 0 0 0 0 2
3.3600E+02 3.5000E+01 3.7940E-02 1.0240E+02 2.8190E+02 0 0 0 0 0 2
3.3661E+02 2.7000E+01 7.1029E+00 6.2418E+01-2.7157E+02 0 0 0 0 0 1
3.3700E+02 3.5000E+01 3.5140E-01-1.3590E+01-3.5500E+01 0 0 0 0 0 2
3.3730E+02 3.5000E+01 3.75303-01 6.5060E+00-5.5280E-01 0 0'0 0 0 1
3.3745E+02 3.5000E+01 3.9455E-02 4.7777E+02-3.6677E+01 0 0 0 0 0 2
3.3790E+02 3.5000E+01 2.62503-01 8.2190E+01-9.0380E+01 0 0 0 0 0 1
3.3830E+02 3.5000E+01 1.3910E-01-5.6260E+01-7.7180E+01 0 0 0 0 0 1
3.3834E+02 3.7969E+01 1.2583E+00 1.1775E+02-1.0074E+02 0 0 0' 0 0 2
3.3920E+02 3.5000E+01 5.7364E-01-1.3597E+02-2.4110E-01 0 0-0 0 0 2
3.4003E+02 3.4776E+01 6.9996E+00-2.8719E+02-8.2347E+02 0 0 0 0 0 2
3.4006E+02 2.5982E+01 1.1117E+01 1.4699E+02-1.0136E+01 0 0 0 0 0 1
3.4090E+02 3.5000E+01 3.25003-01 2.2530E+02-2.7220E+00 0 0 0 0 0 2
3.4148E+02 3.5000E+01 9.5703E-02 2.3812E+02-2.6624E+01 0 0 0 0 0 2
3.4150E+02 3.5000E+01 2.50903-01 2.4200E+01-8.7770E+01 0 0 0 0 0 1
3.4223E+02 4.1848E+01 2.5658E+00 2.5275E+01-1.9679E+01 0 0 0 0 0 2
3.4315E+02 3.7934E+01 3.4825E+00 8.5143E+00 1.6000E-01 0 0 0-0 0 2
3.4360E+02 3.7905E+01 8.0439E+00 9.8657E+02 1.7348E+02 0 0 0 0' 0 1
3.4398E+02 3.7455E+01 6.6652E+00 4.1543E+01-2.9595E+00 0 0 0'0 0 2
3.4469E+02 3.5000E+01 8.51583-02 5.5281E+02 3.7156E+01 0 0 0 0 0 2
3.4526E+02 3.5000E+01 1.5119E-01 2.3469E+02-7.2275E+00 0 0 0 0 0 1
3.4570E+02 3.5000E+01 3.8780E-01-3.5240E+01 1.4980E+01 0 0 0 0 0 2
3.4695E+02 3.4593E+01 5.9081E+00 7.2916E+01-1.1088E+02 0 0 0 0 0 2
3.4741E+02 3.7558E+01 1.8186E+00-5.0237E+02 5.0455E+01 0 0 0 0 0 1
3.4757E+02 3.5000E+01 8.7906E-02 6.0578E+0112E+02 0 0 0 0 0 2
3.4818E+02 3.6133E+01 2.1881E+00 3.8589E+01-4.4437E+00 0 0 0 0 0 2
3.4936E+02 3.4411E+01 1.3881E+00 2.7058E+01 3.3632E+02 0 0 0 0 0 2
3.4942E+02 3.5000E+01 1.49403-01 4.1910E+01-5.5459E+01 0 0 0 0 0 i
3.5019E+02 3.5000E+01 1.2720E-01 2.3222E-01-3.8796E+02 0 0'0 0 0 2
3.5081E+02 3.6411E+01 2.5666E+00 3.7350E+02-7.0596E+00 0 0 0'0'0 1'
3.5100E+02 3.6964E+01 8.2331E-01-6.1620E+00-1.6000E-01 0 0 0 0 0 2
3.5166E+02 4.4435E+01 4.0618E+00 1.3079E+02-2.4705E-01 0 0 0 0 0 1
3.5191E+02 3.5000E+01 2.0398E-01-1.4363E+01 3.6677E+02 0 0 0 0 0 2
3.5276E+02 3.5000E+01 9.2723E-02-4.3154E+01 2.3523E+01 0 0 0 0 0 2
3.5281E+02 3.5971E+01 3.0981E+00 5.0608E+01-2.0708E+01 0 0 0 0 0 1
3.5323E+02 4.1970E+01 2.7334E+00 7.8162E+02-8.8009E+01 0 0 0 0 0 2
3.5324E+02 3.6251E+01 1.4273E+00 1.3093E+02-1.7491E+02 0 0 0-0 0 1
3.5412E+02 3.5000E+01 4.5228E-02-3.3506E+02 9.1579E+02 0 0 0 0 0 2
3.5484E+02 3.5000E+01 2.0663E-02-7.8437E+01 3.8077E+02 0 0 0 0 0 2
3.5533E+02 4.1795E+01 6.5826E+00 3.7288E+02-2.7411E+00 0 0 0 0 0 1
3.5605E+02 3.4554E+01 3.6292E+00 6.8875E+00-2.3999E+00 0 0 0 0 0 2
3.5641E+02 3.5000E+01 1.3461E-01-5.8917E+02-2.2142E+02 0 0 0 0 0 2
3.5654E+02 3.3761E+01 3.3639E+00 9.0974E+01-6.4309E+02 0 0' 0' 0 0 1
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3.5747E+02	3.3356E+01	8.27203-01	1.0668E+02	-2.6235E+02	0	0	0	0	0	2
3.5779E+02	3.5270E+01	7.9854E-01	9.4614E+01	-7.4872E+01	0	0	0	0	0	1
3.5856E+02	3.5000E+01	4.5924E-01	3.0024E+02	-7.5420E+01	0	0	0	0	0	2
3.5874E+02	3.5000E+01	2.3654E-01	1.7521E+02	-9.3745E+01	0	0	0	6	0	1
3.5960E+02	4.3979E+01	1.8702E+00	1.6337E+02	-1.5516E+01	0	0	0	0	0	2
3.5980E+02	3.8980E+01	7.80903-01	5.2660E+00	1.3480E+02	0	0	0	0	0	1
3.6044E+02	3.3618E+01	2.5077E+00	1.7378E+02	-2.3926E+01	0	0	0	0	0	2
3.6100E+02	3.4338E+01	8.2430E-01	9.8740E+01	3.3080E+00	0	0	0	0	0	1
3.6153E+02	3.6429E+01	4.7270E+00	2.6936E+02	-3.6156E+01	0	0	0	0	0	2
3.6249E+02	4.9283E+01	1.5547E+00	1.6732E+02	-2.4979E+01	0	0	0	6	0	1
3.6269E+02	3.5000E+01	2.1796E-01	8.0365E+01	7.0138E+01	0	0	0	0	0	2
3.6357E+02	3.5000E+01	8.3518E-02	1.5664E+02	-3.3718E+01	0	0	0	0	0	2
3.6414E+02	3.6274E+01	2.2632E+00	1.3435E+02	-4.8789E+02	0	0	0	0	0	1
3.6448E+02	3.6794E+01	2.0114E+00	2.6332E+00	-3.4381E+01	0	0	0	0	0	2
3.6515E+02	3.7067E+01	4.7992E+00	9.2751E+01	-2.3310E+02	6	0	0	6	0	1
3.6558E+02	3.3479E+01	1.2577E+00	-1.0312E+02	-8.9600E+01	0	0	0	0	0	2
3.6593E+02	3.6715E+01	1.6245E+00	-6.7594E+01	-1.4493E+02	0	0	0	0	6	1
3.6690E+02	3.5000E+01	6.4907E-01	5.8450E+00	-1.8500E+01	0	0	0	0	0	2
3.6794E+02	3.5000E+01	6.9282E-01	-3.0131E+02	-3.1031E+02	0	0	0	0	0	2
3.6863E+02	4.1517E+01	1.6364E+00	-1.8363E+02	-2.8772E+02	0	0	0	0	0	2
3.6891E+02	3.5000E+01	3.6622E-01	-8.6375E+00	2.0867E+01	0	0	0	0	0	1
3. 6986E+02	4 .0964E+01	1.5879E+00	-7. 6390E+00	-4.1472E+01	0	0	0	0	0	2
3.7032E+02	3.2163E+01	5.5063E+00	-1.4103E+01	-1.5544E+01	0	0	0	0	0	2
3.7137E+02	4.1286E+01	3.1760E+00	8.5034E+01	-1.8806E+02	0	0	0	0	0	1
3.7143E+02	3.5000E+01	1.4666E-02	-4.1397E+01	8.7136E+01	0	0	0	0	0	2
3.7260E+02	3.1591E+01	3.2298E+00	2.6095E+00	2.0427E+00	0	0	0	0	0	2
3.7265E+02	3.5000E+01	7.0485E-03	-1.6749E+01	5.3396E+01	0	0	0	0	0	1
3.7325E+02	4.0231E+01	3.3863E+00	3.9584E+02	-1.1301E+01	0	0	0	0	0	1
3.7340E+02	4.1746E+01	8.7954E-01	1.0266E+01	-9.1223E+00	0	0	0	0	0	2
3.7484E+02	3.5000E+01	3.1479E-01	1.0343E+02	-1.2149E+02	0	0	0	0	0	2
3.7546E+02	3.5000E+01	2.6401E-01	2.8699E+02	7.9794E+01	0	0	0	0	0	2
3.7586E+02	3.5000E+01	3.0535E-02	5.4478E+01	-5.5883E+01	0	0	0	0	0	1
3.7647E+02	3.5000E+01	3.8942E-01	-2.2676E+02	-1.5552E+02	0	0	0	0	0	2
3.7731E+02	3.5000E+01	3.7076E-02	1.5085E+01	-2.1579E+01	0	0	0	0	0	1
3.7755E+02	3.4343E+01	1.1560E+00	1.0454E+02	-1.2888E+02	0	0	0	0	0	2
3.7783E+02	3.9811E+01	3.4496E+00	1.3896E+02	-1.4228E+02	0	0	0	0	0	1
3.7850E+02	3.5000E+01	3.1805E-01	-2.2799E+02	1.8938E+01	0	0	0	0	0	2
3.7937E+02	4.1098E+01	2.6378E+00	8.8946E-01	-8.2887E+01	0	0	0	0	0	1
3.7977E+02	2.9907E+01	7.8311E+00	-1.6000E-01	-3.8906E+02	0	0	0	0	0	2
3.8023E+02	4.2329E+01	2.9306E+00	2.9463E+00	2.0179E+01	0	0	0	0	0	2
3.8132E+02	3.5000E+01	5. 6868E-02	7.7991E+00	2.8997E+01	0	0	0	0	0	2
3'8159E+02	3'4611E+01	5.4892E+00	2.2083E-01	2.2956E+01	0	0	0	0	0	2
3.8191E+02	3.4338E+01	1.1356E+00	1.0224E+01	-1.6043E+02	0	0	0	0	0	1
3.8248E+02	3.5000E+01	1.0996E-01	-7.6782E+00	9.2826E+00	0	0	0	0	0	2
3.8320E+02	3. 5000E+01	1.5706E-01	-4. 8997E+00	-2.2479E+00	0	0	0	0	0	1
3.8332E+02	3.8138E+01	5.4555E+00	2.5620E+02	-4.2052E+01	0	0	0	0	0	2
3.8431E+02	3.5000E+01	9.6658E-02	-5.4737E+01	-1.0861E+02	0	0	0	0	0	2
3'8442E+02	4'1668E+01	1.5549E+00	-7.9 752E+00	1.6630E+01	0	0	0	0	0	1
3.8492E+02	3.5000E+01	1.0084E-01	4.8482E+01	-8.5385E+01	0	0	0	0	0	2
3.8516E+02	3 .5000E+01	5. 2303E-01	4.3391E+02	2.1492E+02	0	0	0	0	0	2
3'8517E+02	3'6301E+01	8'5441E-01	7.4321E+01	-1.3249E+02	0	0	0	0	0	1
3.8697E+02	4.3825E+01	1.4471E+00	-3.8271E+00	4.0004E+00	0	0	0	0	0	1
3 .8743E+02	3. 4411E+01	8 .3604E+00	5. 8924E+01	4.3454E+01	0	0	0	0	0	2
3.8829E+02	3.5008E+01	3.8495E+00	-7.8752E+01	1.7465E+01	0	0	0	0	0	1
3. 8838E+02	3 .5000E+01	8.3924E-05	-8 .4853E+01	-3.5375E+01	0	0	0	0	0	2
3.8888E+02	3.2827E+01	1.2959E+00	1.1786E+00	-2.4213E-01	0	0	0	0	0	1
3.8949E+02	3.5000E+01	4.2316E-02	9.1199E+01	-4.2074E+01	0	0	0	0	0	2
3. 9070E+02	3 .5000E+01	1 .9022E-01	9.3847E-01	1.7849E+00	0	0	0	0	0	2
3. 9115E+02	3 .5000E+01	7 .0079E-02	-5 .1385E+01	-6.1021E+01	0	0	0	0	0	1
3. 9174E+02	3 .5000E+01	3. 8421E-03	-1. 0533E+01	5.5835E+02	0	0	0	0	0	2
3. 9220E+02	3.4224E+01	7. 6129E+00	5.3369E+01	-1. 1140E+02	0	0	0	0	0	2
3.92 8 1E+02	3. 5000E+01	4. 7772E-01	2.0988E+02	5.0948E+01	0	0	0	0	0	2
3.9340E+02	3.1776E+01	2.0038E+00	8.9275E+01	3.8776E+02	0	0	0	0	0	1
3.9343E+02	3.5000E+01	5.7070E-02	6.1552E+01	1.1242E+02	0	0	0	0	0	2
3.9404E+02	3.5000E+01	1.3811E-01	1.7689E+02	2.4970E+02	0	0	0	0	0	2
3.9430E+02	3'5000E+01	5.3309E-01	1.8280E+02	-1.3470E+01	0	0	0	0	0	1

3.9487E+02	3.5000E+01	4.8528E-01	2.7006E+02	-2.1203E+02	0	0	0	0	0	2
3.9550E+02	3.5000E+01	5.7674E-02	-6.6314E+01	-2.3185E+01	0	0	0	0	0	2
3.9582E+02	3.5933E+01	1.7453E+00	5.3111E+02	-4.7730E+01	0	0	0	0	0	1
3.9650E+02	3.5000E+01	1.0630E-01	2.9655E+01	4.1756E+00	0	0	0	0	0	1
3.9657E+02	3.1883E+01	6.8670E+00	1.8800E+02	-4.4950E+01	0	0	0	0	0	2
3.9738E+02	3.7440E+01	3.2190E+00	3.3918E+01	9.3937E+00	0	0	0	0	0	1
3.9751E+02	3.5000E+01	1.20683-01	2.1205E+01	-1.5447E+01	0	0	0	0	0	2
3.9840E+02	3.5000E+01	6.88803-02	5.1340E+01	-8.1900E+01	0	0	0	0	0	2
3.9987E+02	3.8581E+01	1.1422E+00	-5.3153E-01	-3.0869E+00	0	0	0	0	0	1
4.0038E+02	3.4646E+01	1.6072E+00	-5.6752E+01	-8.9215E+01	0	0	0	0	0	2
4.0120E+02	3.9354E+01	8.4770E-01	-2.9370E+02	4.6480E+00	0	0	0	0	0	2
4.0155E+02	3.3024E+01	1.0822E+00	-8.9714E-01	-1.4994E+00	0	0	0	0	0	1
4.0235E+02	3.2651E+01	2.6088E+00	1.5317E+02	-2.9358E+02	0	0	0	0	0	2
4.0290E+02	3.4561E+01	8.69243-01	1.6338E+02	-6.3174E+02	0	0	0	0	0	1
4.0320E+02	3.5000E+01	3.33603-01	9.7200E+01	-8.2230E+01	0	0	0	0	0	2
4.0420E+02	3.5000E+01	2.07903-01	1.0500E+02	2.6580E+01	0	0	0	0	0	2
4.0465E+02	3.3121E+01	4.1881E+00	-6.3471E+01	-1.4088E+02	0	0	0	0	0	1
4.0505E+02	3.0377E+01	2.4367E+00	1.5677E+02	-9.2204E+01	0	0	0	0	0	2
4.0578E+02	2.9262E+01	3.3800E+00	1.0237E+02	-2.5592E+02	0	0	0	0	0	1
4.0580E+02	3.5000E+01	1.0050E-01	9.1800E+01	-1.6000E+02	0	0	0	0	0	1
4.0590E+02	3.1326E+01	1.9714E+00	-4.8449E+02	5.6247E+01	0	0	0	0	0	2
4.0690E+02	3.5000E+01	2.32803-01	6.9280E+01	-6.9790E+01	0	0	0	0	0	2
4.0730E+02	3.3112E+01	8.06403-01	6.5680E+01	-1.3790E+02	0	0	0	0	0	1
4.0748E+02	3.5000E+01	1.86773-02	6.9794E+01	-4.0155E+01	0	0	0	0	0	2
4.0799E+02	2.9122E+01	2.3834E+00	3.6192E+02	-1.5342E+02	0	0	0	0	0	2
4.0854E+02	3.2643E+01	4.4817E+00	1.7117E+02	-8.5868E+01	0	0	0	0	0	1
4.0903E+02	3.5000E+01	8.0201E-02	-5.5304E+01	9.8720E+01	0	0	0	0	0	2
4.1000E+02	3.5000E+01	1.79903-01	1.9710E+02	-8.5540E+01	0	0	0	0	0	2
4.1056E+02	3.6251E+01	1.8105E+00	4.8993E+01	-6.3977E+01	0	0	0	0	0	1
4.1079E+02	3.5000E+01	4.2202E-01	4.2595E+01	-3.3733E+01	0	0	0	0	0	2
4.1100E+02	3.5000E+01	2.7948E-01	7.8936E+01	-1.3458E+02	0	0	0	0	0	1
4.1217E+02	3.5000E+01	3.50413-01	4.1131E+01	-6.1742E+01	0	0	0	0	0	2
4.1325E+02	3.5000E+01	7.9878E-02	8.9417E+01	-8.6234E+00	0	0	0	0	0	2
4.1350E+02	3.5000E+01	8.53003-02	8.3000E+01	-6.5170E+01	0	0	0	0	0	1
4.1408E+02	3.6567E+01	2.9129E+00	-4.9634E+01	-3.1724E+02	0	0	0	0	0	2
4.1440E+02	3.5000E+01	1.48303-01	7.9420E+01	-5.8040E+01	0	0	0	0	0	1
4.1500E+02	3.4001E+01	3.6253E+00	-4.4058E+01	-1.0193E+00	0	0	0	0	0	2
4.1557E+02	3.2710E+01	1.8214E+00	2.4857E+00	4.2512E+02	0	0	0	0	0	1
4.1560E+02	3.5000E+01	6.28503-01	2.1890E+02	-7.3840E+01	0	0	0	0	0	1
4.1577E+02	2.8768E+01	1.4216E+00	-1.1670E+02	8.8590E+01	0	0	0	0	0	2
4.1680E+02	3.5000E+01	1.6750E-01	-5.9410E+02	-1.3680E+02	0	0	0	0	0	2
4.1798E+02	3.5000E+01	2.9985E-01	-9.4669E+01	6.9408E+00	0	0	0	0	0	2
4.1822E+02	3.1199E+01	4.5857E+00	6.0868E+01	-2.8478E+01	0	0	0	0	0	1
4.1826E+02	2.5818E+01	5.5407E+00	1.5139E+01	5.9325E+01	0	0	0	0	0	2
4.1986E+02	4.9695E+01	5.9809E+00	1.6715E+02	-6.8884E+01	0	0	0	0	0	2
4.1989E+02	3.7883E+01	1.9114E+00	7.5112E+02	1.0683E+01	0	0	0	0	0	2
4.2044E+02	3.5000E+01	8.00603-02	6.7759E+01	6.2773E+01	0	0	0	0	0	1
4.2050E+02	3.5000E+01	1.9890E-02	-4.9911E+00	7.3899E+00	0	0	0	0	0	2
4.2161E+02	3.5000E+01	1.89513-01	3.4541E+02	-5.5793E+02	0	0	0	0	0	2
4.2163E+02	3.5000E+01	4.5562E-01	1.3597E+02	-2.3242E+02	0	0	0	0	0	1
4.2254E+02	3.5000E+01	3.51673-01	1.4219E+02	-1.2192E+02	0	0	0	0	0	2
4.2276E+02	3.5000E+01	5.0019E-02	-2.1895E+00	1.8382E+02	0	0	0	0	0	1
4.2305E+02	3.5150E+01	2.8856E+00	1.5802E+02	-6.9033E+02	0	0	0	0	0	2
4.2338E+02	2.7049E+01	9.0151E+00	-2.8611E-01	-5.8010E+02	0	0	0	0	0	1
4.2392E+02	3.2620E+01	2.1349E+00	2.0968E+02	-3.8955E+02	0	0	0	0	0	2
4.2400E+02	3.5000E+01	1.3679E-01	-2.5340E+02	-6.1210E+01	0	0	0	0	0	1
4.2429E+02	3.1513E+01	1.7642E+00	5.4116E+01	-5.4686E+01	0	0	0	0	0	2
4.2451E+02	3.5000E+01	1.0490E-01	9.5520E+01	-4.1397E+01	0	0	0	0	0	2
4.2522E+02	3.6188E+01	7.9475E+00	-3.8494E+01	-4.0374E+00	0	0	0	0	0	1
4.2550E+02	3.5000E+01	l-58433-01	1.9477E+01	-6.1617E+01	0	0	0	0	0	2
4.2609E+02	3.4406E+01	6.3387E+00	5.4663E+02	-7.8144E+01	0	0	0	0	0	1
4.2650E+02	3.5000E+01	1.0559E-01	-9.0978E+02	-1.6956E+01	0	0	0	0	0	2
4.2747E+02	2.9386E+01	4.4097E+00	-6.3884E+01	-8.2127E+01	0	0	0	0	0	2
4.2878E+02	3.7448E+01	3.1712E+00	1.1050E+02	-2.3246E+01	0	0	0	0	0	2
4.2943E+02	3.6380E+01	4.1479E+00	2.0722E+01	-2.2892E+01	0	0	0	0	0	1
4.3040E+02	3.3802E+01	6.3712E+00	2.0359E+02	-4.1136E+02	0	0	0	0	0	2

4.3121E+02	3.1377E+01	4.3093E+00	1.5292E+02	-1.5796E+02	0 0 0 0 6 1
4.3150E+02	3.5000E+01	1.0167E-01	1.1091E+02	3.4043E+02	0 0 0 0 0 '2
4.3200E+02	3.5000E+01	1.2269E-01	4.3075E+02	g-43483-01	0 0'0 0 0 1
4.3249E+02	3.5000E+01	1.3452E-01	-3.2211E+01	8.2035E+01	0 0 0 0 0 2
4.3346E+02	5.0564E+01	8.5523E+00	2.9129E+02	-4.5245E+02	0 0 0 0 0 2
4.3349E+02	3.5000E+01	1.06273-01	1.8154E+02	7.9599E+02	0 0 0 6 0 1
4.3390E+02	2.8140E+01	7.7487E+00	1.0809E+02	6.5897E+01	'0 0 0 0 0 2
4.3470E+02	3.5000E+01	9.4320E-02	-1.5634E+02	-9.2748E+02	0 0 0 0 0 2
4.3488E+02	2.9079E+01	6.9459E+00	6.9176E+01	-5.8011E+01	0 0 0 0 0 1
4.3528E+02	3.5000E+01	6.3256E-02	3.1879E+01	-2.0551E+00	0 0 0 0 0 2
4.3629E+02	3.5000E+01	l-34323-01	9.9222E-01	-2.9760E+02	0 0 0 0 0 -2
4.3638E+02	3.5000E+01	2.3756E-01	9.8640E+01	-5.0604E+01	6 0 0 6' 6 2
4.3701E+02	3.5000E+01	5.0059E-01	-5.6118E+02	2.9478E+01	0 0 0 0 0 1
4.3730E+02	3.5000E+01	1.1614E-01	-1.5170E+02	-2.1987E+02	0 0 0 0 0 2
4.3803E+02	3.5000E+01	3.8591E-01	2.1213E+02	-3.9461E+01	0 0 0 0 0 1
4.3880E+02	4.7884E+01	3.8199E+00	2.9697E+02	3.5883E+02	0 0 0 0 0 2
4.3914E+02	3.5297E+01	6.1755E+00	2.8322E+01	2.0438E+01	0 0 0 0 0 1
4.3976E+02	2.8547E+01	2.0816E+00	-4.4019E+01	-4.8236E+01	0 0 0 0 0-i'
4.4039E+02	3.5164E+01	1.0573E+01	3.6323E+01	-1.1356E+02	0 0 0 0 0 2
4.4121E+02	3.8797E+01	7.8983E-01	8.4164E+01	-7.0572E+01	0 0 0 0 0 1
4.4122E+02	3.5000E+01	1.5061E-01	1.5682E+02	-3.1617E+02	0 0 0 0 0 2
4.4216E+02	3.0522E+01	9.9543E+00	2.4062E+02	2.2866E+02	0 0 0 0 0 2
4.4320E+02	3.5000E+01	7.0108E-02	-9.7530E+01	-6.7823E+01	0 0 0 0 0 2
4.4352E+02	3.5000E+01	2.1900E-01	-9.8614E+01	6.3785E+00	0 0 0 0 0 1
4.4419E+02	3.5000E+01	4.1832E-01	3.6274E+02	-1.7705E+01	0 0 0 0 0 2
4.4439E+02	3.5000E+01	6.7615E-01	1.6226E+02	3.2231E+01	0 0 0 0 0 1
4.4490E+02	3.5000E+01	6.3292E-02	-6.4048E+02	-3.3639E+02	0 0 0 0 0 2
4.4538E+02	3.8457E+01	9.8768E-01	6.4760E+01	-6.0258E+01	0 0 0 0 0 1
4.4574E+02	3.2750E+01	7.0600E-01	3.1967E+01	3.8110E+01	0 0 0 0 0 2
4.4700E+02	3.5000E+01	8.5170E-02	1.9140E+01	7.9860E+01	0 0 0 0 0 2
4.4775E+02	4.3608E+01	2.2842E+00	2.4226E+02	-2.6429E+01	0 0 0 0 0 1
4.4789E+02	3.5000E+01	8.5782E-02	-1.0281E+02	-2.8569E+02	0 0 0 0 0 2
4.4868E+02	3.0670E+01	4.9374E+00	4.0518E+01	1.3265E+01	0 0 0 0 0 2
4.4943E+02	3.5000E+01	4.86203-01	2.9301E+00	1.8817E-02	0 0 0 0 0 1
4.4978E+02	5.0432E+01	5.9829E+00	2.9168E+02	-4.0414E+01	0 0 0 0 0 2
4.5071E+02	3.9793E+01	2.8644E+00	5.8815E+01	-1.2190E+02	0 0 0 0 0 1
4.5079E+02	3.5000E+01	1.6102E-01	6.4570E+02	4.1525E+01	0 0 0 0 0 2
4.5160E+02	3.5000E+01	1.3220E-01	1.0143E+02	-8.6795E+01	0 0 0 0 0 2
4.5200E+02	3.5000E+01	8.7779E-02	-1.1685E+00	9.4765E+01	0 0 0 0 0 1
4.5221E+02	3.5000E+01	2.8406E-01	3.6300E+02	1.2306E+02	0 0 0 0 0 2
4.5297E+02	3.8192E+01	9.8996E-01	9.2266E+01	-4.2621E+02	0 0 0 0 0 1
4.5362E+02	3.6540E+01	5.6572E+00	-1.7099E+01	5.6654E+01	0 0 0 0 0 2
4.5413E+02	3.3580E+01	2.0641E+00	3.2270E+01	-7.5962E+01	0 0 0 0 0 2
4.5430E+02	3.5000E+01	1.4146E-01	-2.0758E+02	7.7632E+01	0 0 0 0 0 1
4.5463E+02	3.5000E+01	1.5678E-01	-6.5764E+01	4.6610E+02	0 0 0 0 0 2
4.5560E+02	3.5000E+01	8.3011E-02	1 3136E+02	5.0697E+02	0 0 0 0 0 2
4.5562E+02	3.1941E+01	2.7418E+00	-2.1972E+01	-1.7203E+01	0 0 0 0 0 1
4.5660E+02	3.5000E+01	9.0850E-02	1.9340E+02	-1.4590E+02	'0 0 0 0 0 2
4.5719E+02	3.5000E+01	1.1322E-01	-1.7977E+02	-5.0876E+01	0 0 0 0 0 1
4.5790E+02	3.5753E+01	1.1247E+00	1.1641E+02	-3.6672E+02	0 0 0 0 0 2
4.5859E+02	3.5000E+01	1.3598E-01	3.1071E+00	8.1400E+00	0 0 0 0 0 2
4.5876E+02	3.8815E+01	5.8457E+00	3.8170E+02	-1.3436E-01	0 0 0 0 0 1
4.5957E+02	2.9828E+01	3.5796E+00	4.6494E+01	7.3839E+01	0 0 0 0 0 2
4.6009E+02	3.5000E+01	1.1512E-01	9.6528E+02	7.0123E+02	0 0 0 0 0 1
4.6101E+02	3.5000E+01	1.3310E-01	1.5851E+01	-4.0740E+02	0 0 0 0 0 2
4.6152E+02	3.8461E+01	4.3496E+00	9.0827E+02	2.5482E+02	0 0 0 0 0 1
4.6184E+02	3.7318E+01	1.1469E+01	9.1250E+00	-2.0259E+01	0 0 0 0 0 2
4.6284E+02	5.3347E+01	2.4486E+00	-5.3240E+01	4.5465E+02	0 0 0 0 0 2
4.6334E+02	3.5000E+01	1.9694E-01	-2.0185E+01	-1.8074E+01	0 0 0 0 0 2
4.6380E+02	3.5849E+01	1.7642E+01	-2.8733E+00	-2.8198E+02	0 0 0 0 0 1
4.6419E+02	2.5879E+01	2.4170E+00	1.0273E+01	1.8433E+02	0 0 0 0 0 2
4.6513E+02	3.5000E+01	9.6660E-02	-4.7735E+02	-6.2470E+01	0 0 0 0 0 2
4.6562E+02	3.5000E+01	9.1594E-02	-1.0426E+02	-2.8172E+02	0 0 0 0 0 1
4.6610E+02	3.5000E+01	7.7436E-02	2.0539E+02	4.0808E+01	0 0 0 0 0 2
4.6645E+02	3.5193E+01	3.2211E+00	2.1248E+02	-2.3505E+01	0 0 0 0 0 1
4.6650E+02	3.5000E+01	2.4907E-01	6.4868E+01	-1.0196E+02	0 0 0 0 0 1

4.6714E+02	3.5911E+01	1.1596E+00	-3.1957E+01	-3.7807E+02	0	0	0	0	0	2
4.6851E+02	3.8483E+01	2.6582E+00	-2.5077E+02	1.0534E+02	0	0	0	0	0	2
4.6862E+02	3.5717E+01	7.8900E-01	-3.4308E+02	-1.4270E+02	0	0	0	0	0	1
4.6899E+02	3.5000E+01	9.9390E-02	4.3898E+01	8.1329E+01	0	0	0	0	0	2
4.6907E+02	3.3230E+01	4.8111E+00	5.4140E+01	-4.7567E+02	0	0	0	0	0	1
4.6990E+02	3.5000E+01	2.9600E-01	-1.5330E+01	-5.3470E+02	0	0	0	0	0	2
4.7034E+02	3.2551E+01	1.2376E+00	-3.2339E+01	1.1256E+02	0	0	0	0	0	1
4.7094E+02	3.5000E+01	1.4697E-01	-4.8675E+01	2.3931E+02	0	0	0	0	0	2
4.7179E+02	3.5000E+01	1.3400E-01	-2.3258E+01	3.3017E+02	0	0	0	0	0	1
4.7181E+02	3.5750E+01	9.9480E+00	3.7283E+01	-2.6409E+02	0	0	0	0	0	2
4.7200E+02	3.5000E+01	9.69653-02	4.0342E+01	6.7570E+01	0	0	0	0	0	2
4.7301E+02	3.5000E+01	3.3451E-02	1.2790E+02	3.6061E+02	0	0	0	0	0	2
4.7338E+02	3.0644E+01	1.8593E+00	2.1967E+01	-7.3296E+01	0	0	0	0	0	1
4.7406E+02	3.5000E+01	6.13083-01	5.4498E+01	-1.0515E+02	0	0	0	6	0	2
4.7461E+02	3.5000E+01	4.5266E-02	1.0465E+02	-1.5777E+02	0	0	0	0	0	2
4.7515E+02	3.4746E+01	1.5720E+00	7.6910E+00	-4.2299E+01	0	0	0	0	0	1
4.7558E+02	3.5000E+01	4.6870E-01	1.3019E+02	-4.5458E+02	0	0	0	0	0	2
4.7665E+02	3.7296E+01	3.5733E+00	5.5435E+00	4.0957E+00	0	0	0	0	0	2
4.7691E+02	3.5000E+01	3.9232E-01	-9.0916E+01	-1.9090E+02	0	0	0	0	0	1
4.7720E+02	3.5000E+01	1.28863-01	9.3186E-02	-9.6031E+00	0	0	0	0	0	2
4.7732E+02	3.6041E+01	3.8515E+00	1.7118E+02	-2.9243E+01	0	0	0	6	0	1
4.7820E+02	3.5000E+01	8.6930E-02	7.9813E+02	-9.4678E+01	0	0	0	0	0	2
4.7900E+02	3.5000E+01	E-23653-02	2.1677E+02	-2.3107E+01	0	0	0	0	0	1
4.7924E+02	3.0126E+01	1.2688E+01	1.0028E+02	7.8848E+01	0	0	0	0	0	2
4.8114E+02	3.5000E+01	1.0301E-01	9.2052E+01	-3.3667E+02	0	0	0	0	0	2
4.8128E+02	3.5513E+01	1.4848E+01	6.2379E+01	-8.1334E+01	0	0	0	0	0	1
4.8208E+02	5.0456E+01	4.9671E+00	7.0107E+00	-2.8312E+02	0	0	0	0	0	2
4.8276E+02	3.7080E+01	1.2850E+00	5.7686E+02	-1.2455E+02	0	0	0	0	0	1
4.8282E+02	3.5000E+01	1.0929E-01	-1.2273E+02	8.4528E+01	0	0	0	0	0	2
4.8341E+02	4.2036E+01	3.5689E+00	1.5900E+02	-4.0011E+02	0	0	0	0	0	2
4.8442E+02	3.1961E+01	1.8449E+00	-9.4435E+00	-7.6169E+01	0	0	0	0	0	1
4.8445E+02	3.5000E+01	1.0018E-01	-5.1025E+02	2.1961E+02	0	0	0	0	0	2
4.8531E+02	3.3664E+01	3.2671E+00	-1.7422E+02	-4.1703E+01	0	0	0	0	0	2
4.8614E+02	3.5000E+01	6.4976E-01	7.4890E+01	-1.1712E+02	0	0	0	0	0	1
4.8619E+02	3.5000E+01	1.0843E-01	-7.3855E+01	-1.2337E-01	0	0	0	0	0	2
4.8714E+02	3.8213E+01	4.0121E+00	3.7080E-01	-3.4437E+02	0	0	0	0	0	2
4.8789E+02	3.5000E+01	l-99693-01	1.3313E+02	-2.6826E+02	0	0	0	0	0	1
4.8828E+02	3.5101E+01	7.1201E-01	1.4854E+02	-1.2267E+02	0	0	0	0	0	2
4.8891E+02	3.5000E+01	2.4767E-01	-2.2958E+01	1.4901E+01	0	0	0	0	0	2
4.8909E+02	3.2388E+01	4.2246E+00	3.6395E+02	-4.2221E+02	0	0	0	0	0	1
4.8966E+02	3.8758E+01	5.7074E+00	1.5737E+02	-3.6890E+02	0	0	0	0	0	2
4.9043E+02	3.4171E+01	1.3316E+00	8.3897E+01	-2.0689E+02	0	0	0	0	0	1
4.9044E+02	2.7842E+01	7.1415E+00	1.7135E+02	-5.6190E+01	0	0	0	0	0	2
4.9120E+02	3.5000E+01	S-37303-02	1.4630E+02	-7.7950E+01	0	0	0	0	0	2
4.9221E+02	3.6548E+01	2.7000E+00	2.9461E+02	-7.6053E+01	0	0	0	0	0	1
4.9249E+02	3.5000E+01	6.8058E-02	-3.3400E+02	-1.2795E+01	0	0	0	0	0	2
4.9307E+02	4.0053E+01	3.9516E+00	2.3767E+01	-9.7244E+00	0	0	0	0	0	1
4.9396E+02	3.5164E+01	7.2048E-01	-7.1355E+02	-1.0812E+02	0	0	0	0	0	2
4.9453E+02	4.7792E+01	2.3149E+00	1.0967E+02	-5.9050E+00	0	0	0	0	0	2
4.9513E+02	3.9517E+01	1.3364E+00	1.4465E+02	-5.0210E+00	0	0	0	0	0	2
4.9574E+02	4.0067E+01	8.5116E+00	1.1877E+02	-1.6238E+02	0	0	0	0	0	1
4.9659E+02	3.3896E+01	6.1830E+00	3.0454E+01	-1.5587E+00	0	0	0	0	0	2
4.9740E+02	3.5000E+01	2.6724E-01	-6.4903E+01	-2.0700E+02	0	0	0	0	0	2
4.9812E+02	3.4474E+01	3.2137E+00	3.8928E+02	-5.1522E+01	0	0	0	0	0	1
4.9840E+02	3.5000E+01	1.20393-01	2.2416E+02	-1.7506E+02	0	0	0	0	0	2
4.9946E+02	3.5330E+01	4.8624E+00	-3.7409E+02	-4.8219E+02	0	0	0	0	0	2
4.9950E+02	3.4831E+01	3.8233E+00	7.3265E+02	-9.7398E+01	0	0	0	0	0	1
5.0031E+02	3.5000E+01	1.3209E+01	9.6602E+01	-5.3649E+02	0	0	0	0	0	2
5.0150E+02	3.5000E+01	5.9938E+00	9.3404E+02	-7.5243E+01	0	0	0	0	0	1
5.5000E+02	3.5000E+01	1.1304E+03	4.9670E+02	-1.7531E+02	0	0	0	0	1	1

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