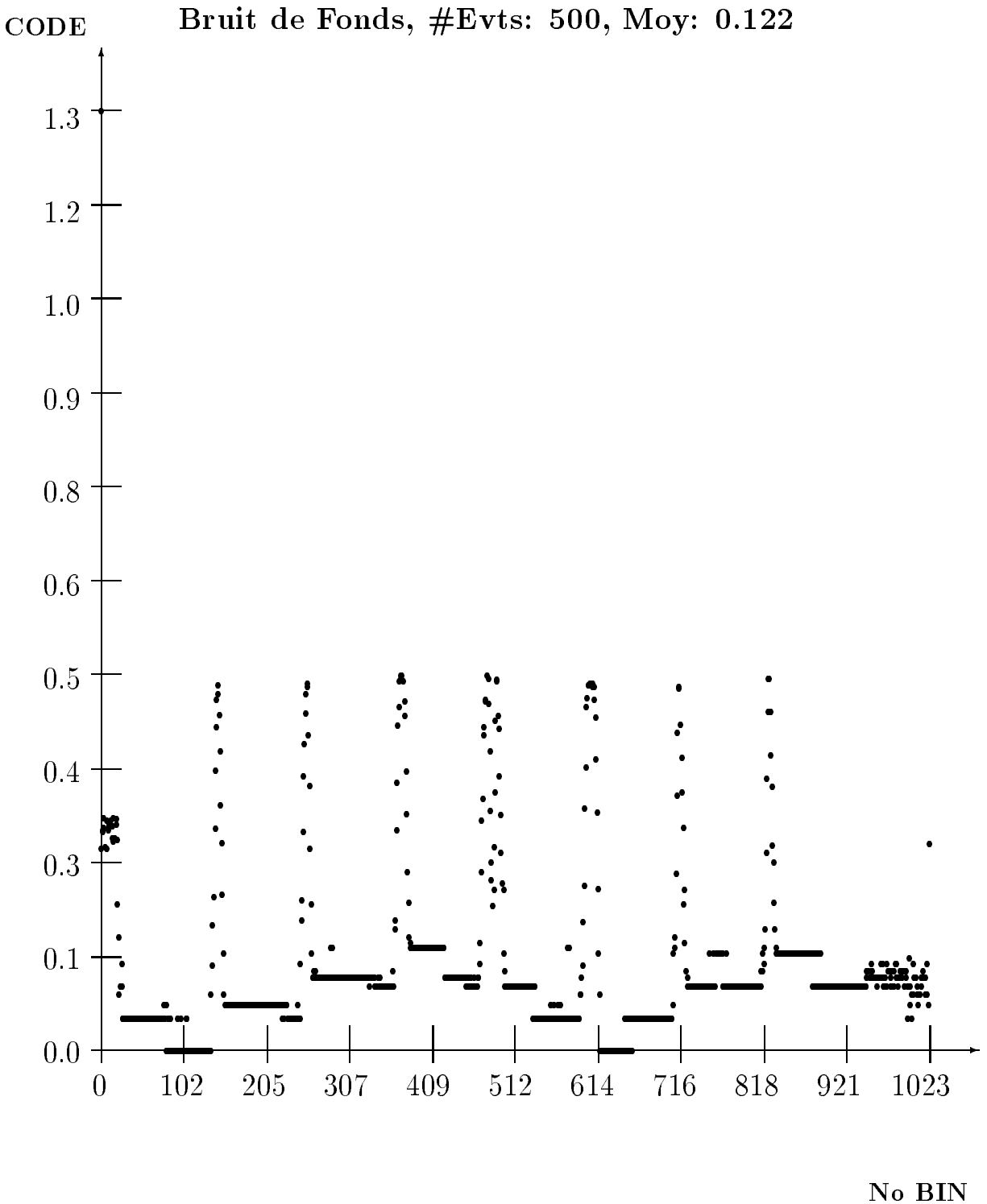
20 feb. 1996, J.P. Martin

Tests of the LBL FADC "chippette"

Summary of tests:

- Differential linearity (Code profile):
  Typical worst case: ± 0.7 LSB ; Sigma: 0.3 LSB
- Integral linearity:
  No slope or curvature visible witbin the accuracy possible with the code profile.
- Noise measurement: At nominal reference voltages:
  $\approx$ 0.1LSB
- Compatibility with non linear operation:
  OK at 4X dynamic range expansion
- Analog bandwith measurement:
  Done with a 3 nsec. rise time pulse and variable delay line
  Equivalent digitized rise time (10-90%): 6 nsec. (chips 3,4);
  13 nsec. (chip5)
- Sampling frequency limits:
  Visual inspection of the triangular pulse response:
  Encoding errors appear at sampling frequencies above 40 MHz .
- Equivalent number of bits:
  Problems with the sine wave purity of our generator. 5 bits (uncorrected) measured at 200 KHz. Gets worse as frequency goes up. Above 1 MHz, the nominal harmonic distortion of the generator corresponds to 5.5 bits. (7.2 bits at 200 KHz), making the measurement unreliable.

FADCTST - LBL #3, PedP=4.0v - February 12, 1996 16:25:03



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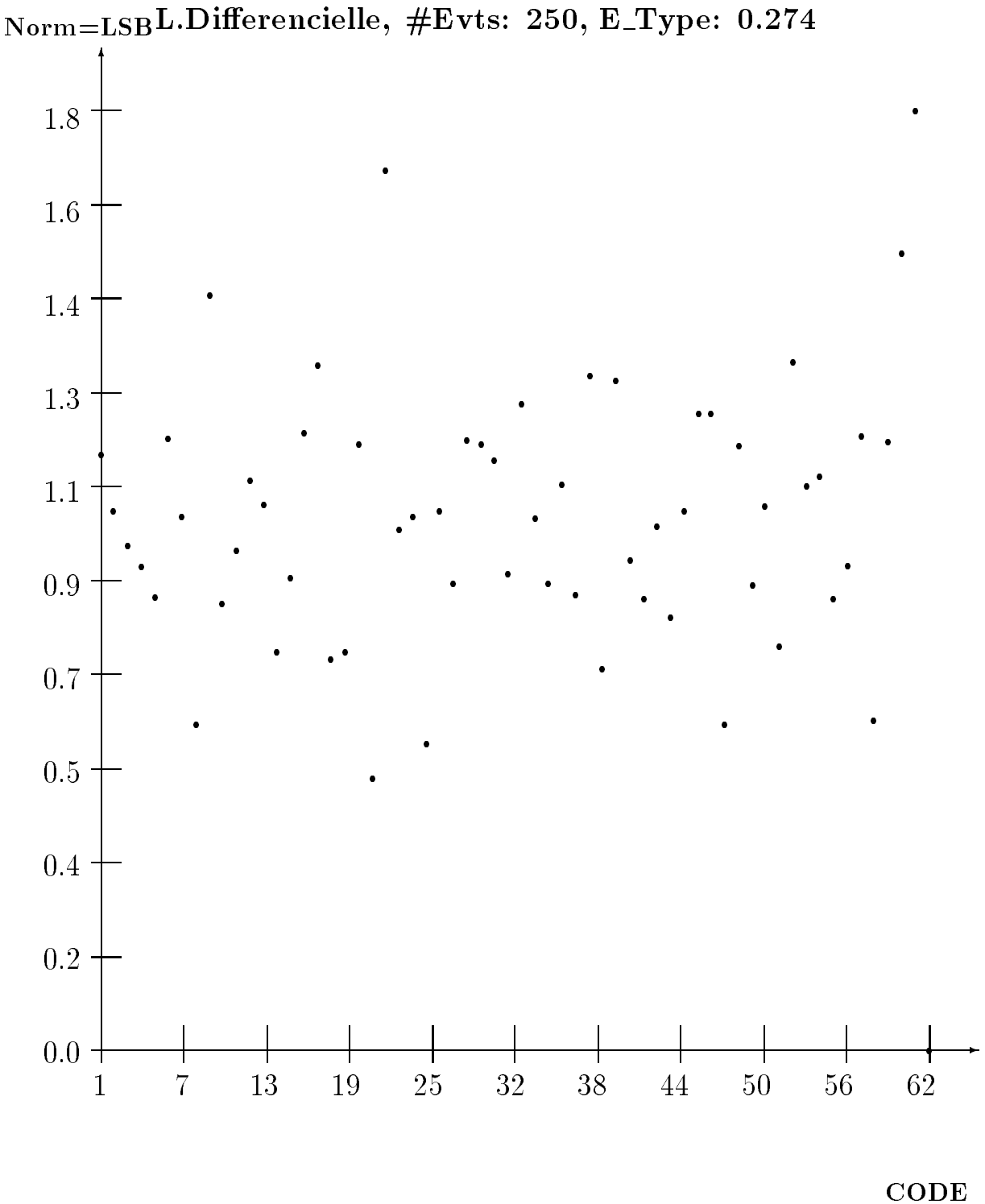
FADCTST - LBL #3 - February 06, 1996 15:04:40



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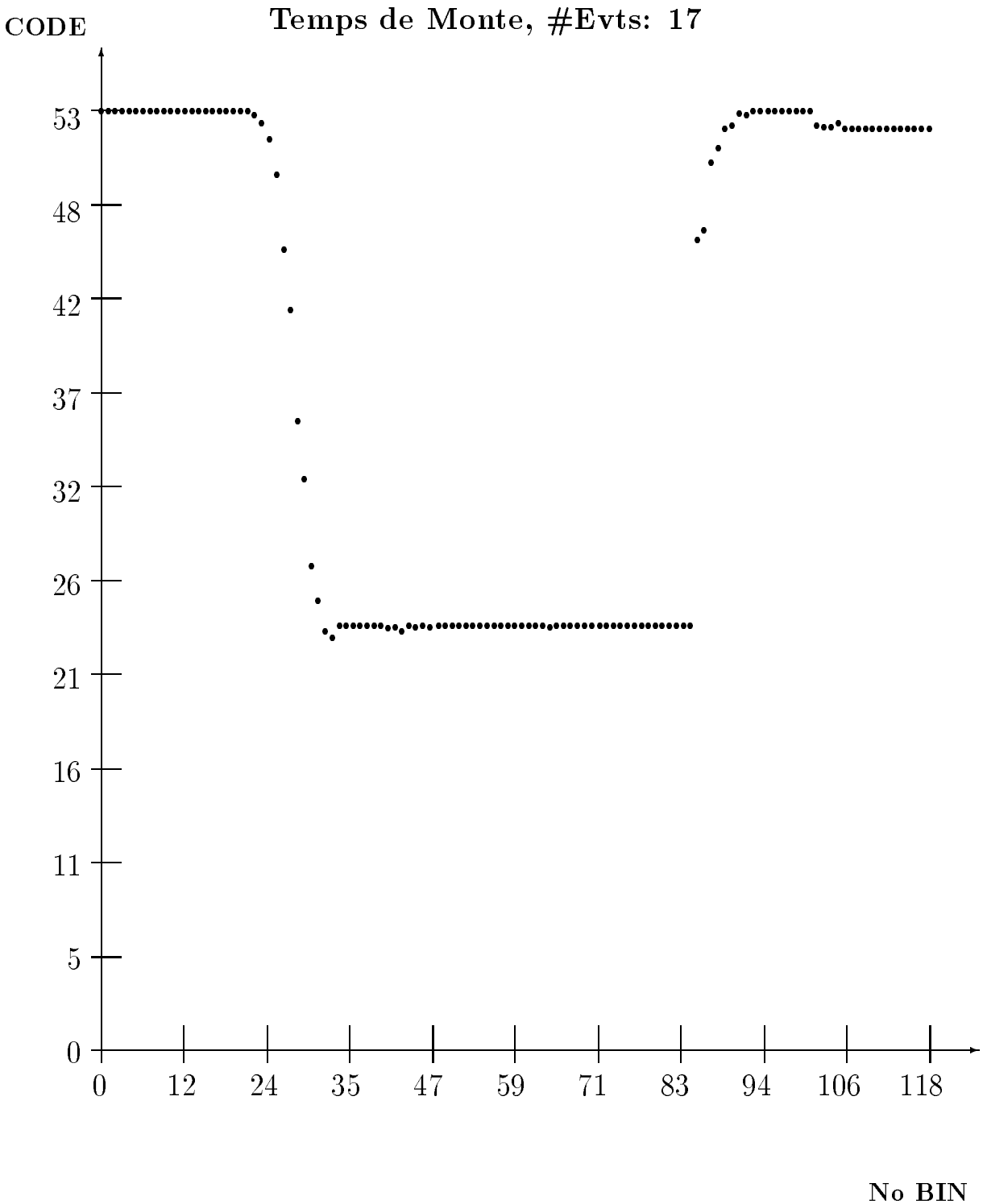
FADCTST - LBL#3, Delay -1ns - February 12, 1996 14:23:22



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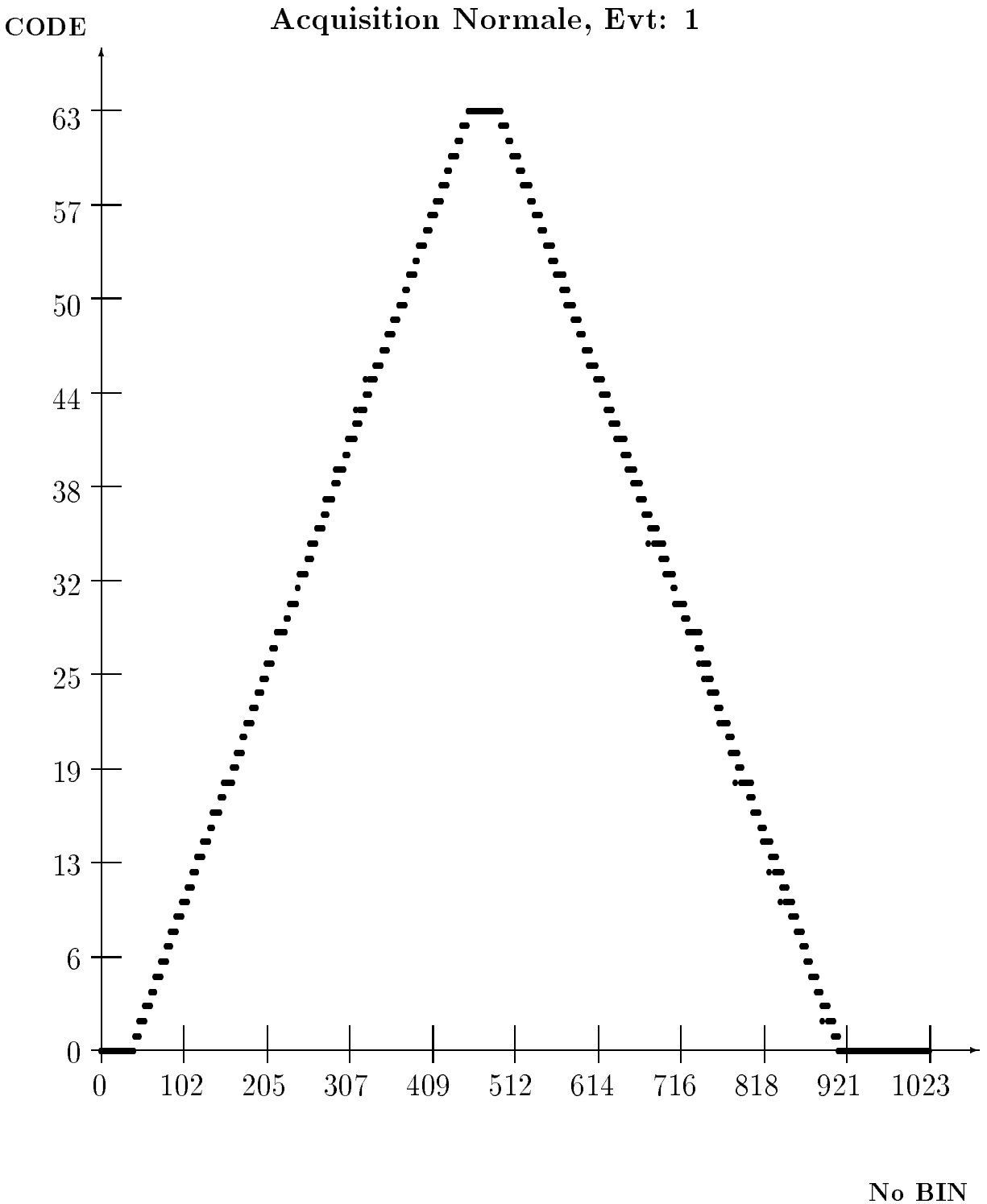

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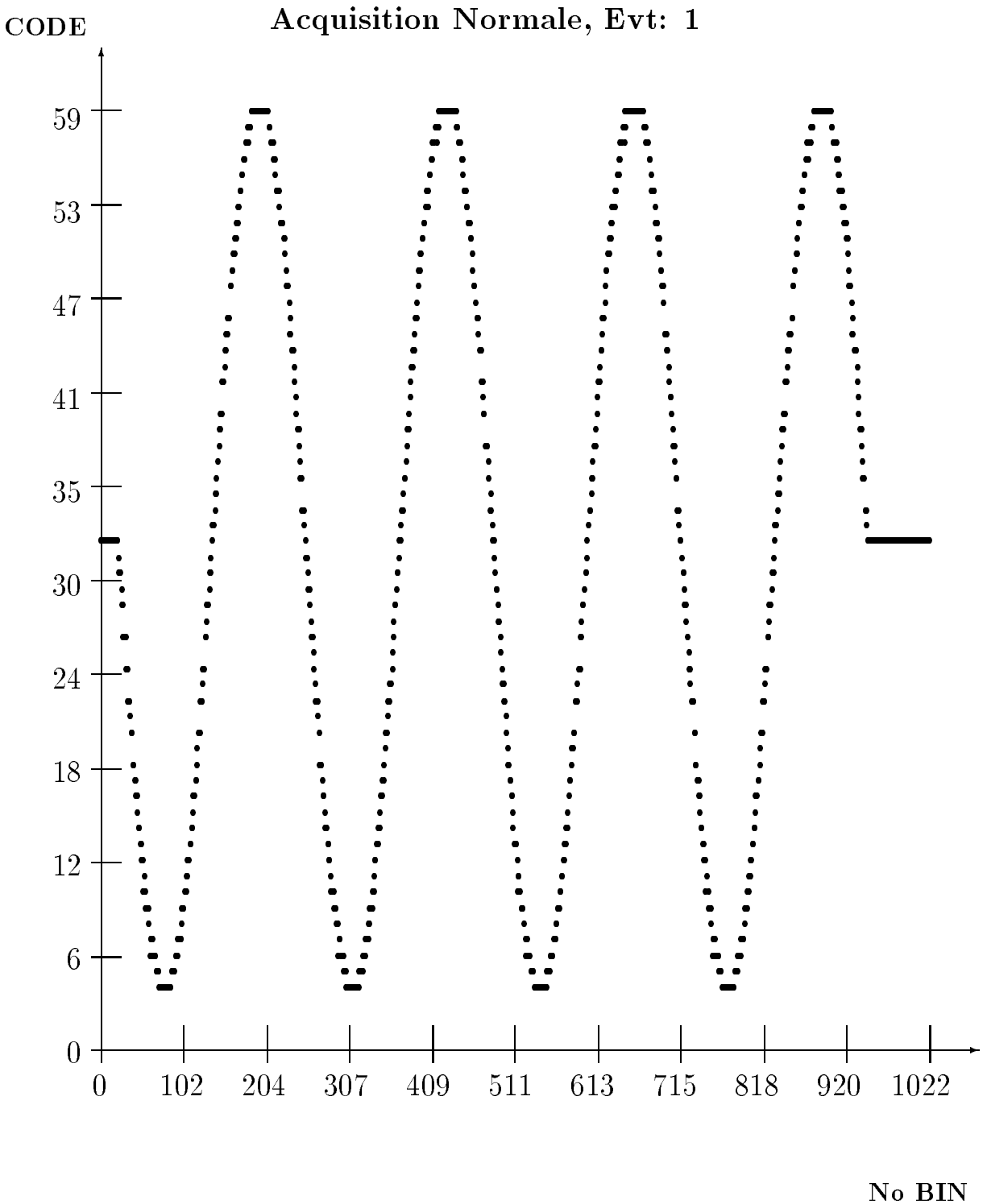

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