The BRAHMS experiment at RHIC

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World Wide Web Home Page
http://rsgi01.rhic.bnl.gov/export1/brahms/WWW/brahms.html

Physics Goals:	Charged hadron spectra in a wide rapidity range
Beams:	Au, Si, p at $\sqrt{s} = 200$ GeV/A

Physics Summary

The BRAHMS experiment at RHIC is designed to measure charged hadrons over a wide range of rapidity and transverse momentum for all available beams and energies. One of the physics goals is to study the reaction mechanism of the relativistic heavy ion reactions at RHIC energies. The properties of stopping will be studied through the net baryon distributions. The expansion and freeze-out characteristics of the hot nuclear system formed in the reaction will be established by studying the spectral shapes and particle abundances. At higher p_t values (1-2.5 GeV/c) the measurements will give insight into the earlier reaction phases through the properties of the hadron spectra at higher p_t values (1-2.5 GeV/c). Some information of space-time properties of system will be obtained from interferometry measurements in a limited rapidity and p_t range. Another goal is to look for evidence of the QGP phase transition as it may manifest itself in the final hadronic stages e.g. through study of the $< p_t >$ dependence with centrality, and the strange particle production via K^+ and K^-, both in the relatively baryon free mid-rapidity region and in the baryon rich fragmentation region.
These goals are achieved using two small solid angle spectrometers which operate from $2^o - 20^o$ and $20^o - 90^o$, respectively. The rapidity range will be from 0 to 4 and the p_t up to 2.5 GeV/c for most of this y range. The centrality of the collisions will be obtained from a multiplicity array.

Selected Publications

"The BRAHMS experiment at RHIC"' F.Videbæk,Nucl.Phys.A566(1994)299c

"Conceptual Design Report for BRAHMS " D. Beavis *et al.*, BNL-1994, unpublished

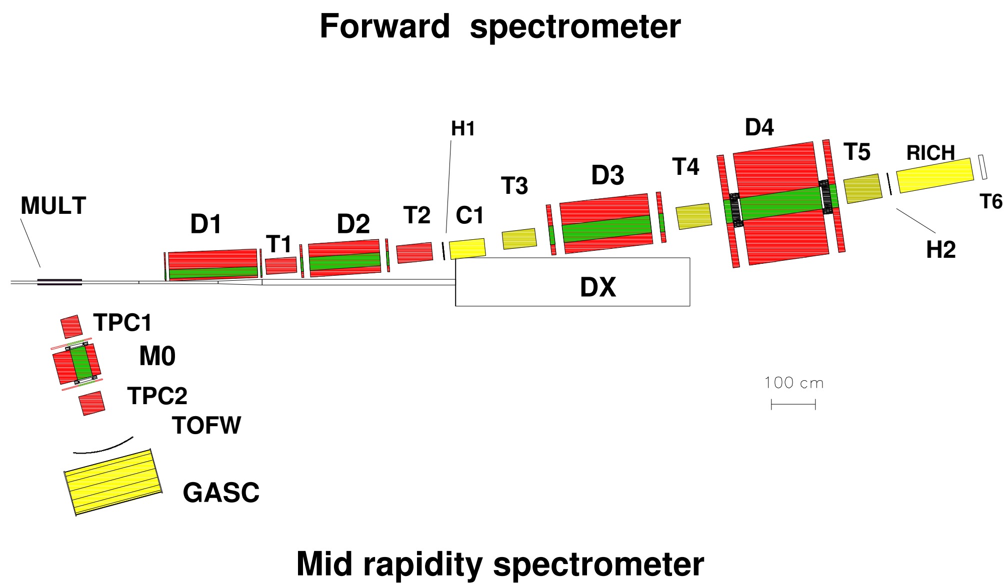

Figure 1: Top View of the BRAHMS Spectrometer

Figure Details

D1 D2 D3 D3	Forward Dipole magnets
T1 T2 T3 T4 T5	Tracking detectors
H1 H2	high resolution TOF Hodoscopes
C1	Segmented Gas Cherenkov
RICH	RICH detector
T6	Back counter for RICH
M0	Mid-rapidity Magnet
TPC1 TPC2	Mid-rapidity TPC's
TOFW	Mid-rapidity TOF-wall with segmentation 225
GASC	Segmented Gas Cerenkov Counter
MULT	Multiplicity detector
DX	RHIC beam line magnet