The BRAHMS Beam-Beam Counters

Yury Blyakhman
New York University, Physics Department

Burton Budick (NYU);
Dana Beavis, Chellis Chasman, Ramiro Debbe,
Flemming Videbaek (BNL); BRAHMS Collaboration

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Figure 1: A perspective view of BRAHMS detector system.
Figure 2: Schematic view of the two Beam-Beam Counters arrays.
Figure 3: Occupancy as a function of the impact parameter for three different detector’s locations (30 events were generated).
Logic

Conditions:
- $\beta = 1$ particles;
- 30 psec arrival time
- 50 psec tube resolution

Will provide:
- Vertex location up to ±2 cm;
- a zero-level trigger;
- the start time for time-of-flight measurements

Figure 4: Logic and Outline.
Figure 5: Time-of-Flight ratio of $\pi^+$, $\pi^0$ and $\pi^-$ hits with respect to the rest of the particles for 4 different array locations.
Test-Beam studies. Front and Side tubes locations.

Figure 6: Test-Beam Studies.

**TDC:**
- no walk correction
- 50 psec-per-channel time resolution

Mean: 588
RMS: 2.2

Mean: 610
RMS: 5.7
Status and Perspectives:

- All tubes have been tested

- Wrapping and gluing is almost over

- Mechanical stand is being manufactured at BNL shops

- BBC are expected to be fully operational by the time of the Test-Beam in July.