Interaction point determination in the BRAHMS experiment

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Abstract

An important and non–trivial part of most measurements in collider physics, is a well–determined interaction point (IP). I will here present the way this information is obtained from the BRAHMS spectrometer.

We can reconstruct coarse IP positions from Zero–Degree Calorimeters (ZDCs) and Beam–Beam Counters (BBs) using time differences. Based on data from our first Time Projection Chamber (TPC) in the midrapidity arm, close to the beam pipe, the IP can be determined with greater precision (¡ 1 cm). I will show correlations between the different IP detectors, their resolutions and efficiencies, and the algorithms we use for obtaining the IP–position from TPC data. I will also show how we use this to calibrate the timing of the ZDCs.

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