

Objectives

- The objective is to create a tool which will add beam-beam interaction background hits to any given event.
- This tool will probably take the form of a Marlin processor which generates the required background SimCalorimeter hits on start-up. The processor would then add the hits to any outputs that Marlin produces (numerical readouts, histograms etc).

Current Approach

- The hits created by the Marlin processor will have a distribution based on simulations of incoherent pair production performed using GuineaPig and Mokka.
- Two rounds of simulations will be required to derive this hit distribution:
- The first set of simulations will simply involve running a large number of GuineaPig/Mokka simulations in order to derive the form of the hit distribution.

Current Approach

- The second round of simulations will involve varying each of the individual accelerator parameters used by GuineaPig. The objective of this exercise is to see how the hit distribution is affected by changing the accelerator parameters.
- This should result in a set of general equations describing the distribution of beam-beam interaction hits for any set of accelerator parameters.

Current Status

- Because Mokka jobs are extremely time consuming to run locally (even in small numbers), both Mokka and GuineaPig have been adapted to run on the grid.
- With jobs submitted properly these programs should provide sufficient material to begin the first stage of analysis within two weeks.
- Jobs intended to produce data for the second stage of analysis can be submitted to the grid at the same time, however this set of jobs is likely to take longer to run (due to the larger number of simulations required).

Test Results

