The PHENIX Event Builder

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Abstract

The PHENIX event builder assembles data from detector subsystems in parallel to assemble complete events for archiving and higher level trigger calculations. The event builder is designed to assemble large events in heavy ion collisions at a rate up to 1 kHz, and smaller events in pp collisions at up to 12.5 kHz, with event sizes ranging from a few tens of kilobytes up to a megabyte. The event builder has been implemented on Intel processors running Windows NT interconnected by an ATM switch. The software design is fully object oriented. An average event rate of 20 Hz and data rate of 10 MB/sec were achieved during year 2000 when RHIC was running at 10% of design luminosity. An overview of design and performance will be shown.