

A First Look At the Timepix2 in Heavy Ion Beams

The long awaited Timepix2 from the Medipix2 Collaboration is due to be available this fall (2018), and plans are in place to expose it to the Heavy Ion beams at the HIMAC facility in Japan this December (2018). The initial goal is to evaluate the extended dynamic range of its' novel pre-amplifier design, and to exercise its' overall performance in a wide range of heavy ion beams. The Timepix2 has a number of additional capabilities over the venerable Timepix detector including the capability to record simultaneously both the charge deposited per pixel and time of arrival. As a frame based device, it also has suppression for events occurring prior to the frame opening, as well as provisions to allow continuation of digitization of events cutoff by the frame closing. Finally, the Timepix2 has the novel feature of 8 full auxiliary digital pixels for use in coupling external detector devices (e.g.SiPMs) for coincident readout within the Timepix2's data stream, avoiding having to synchronize multiple data acquisition systems.

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