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Pre-clinical Results with the Proton CT Head Scanner

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We report the results from CT scans with 200 MeV protons using the head scanner developed by the pCT collaboration in the last four years. The tracker is based on Fermi silicon strip detectors employing "slim edge" technology and is read out by a fast ASIC specifically designed for this application. The energy detector is a multi-stage scintillation counter permitting fast pulse shaping and high rate. The new data acquisition system permits to record a proton rate in excess of 1 MHz. We have been scanning a variety of phantoms at several hospitals with different proton beam time structures in pre-clinical trials to assess the basic scanner parameters like the accuracy of the relative stopping power (RSP) and the position resolution, as a function of phantom depth. Another crucial parameter is the performance of the scanner as a function of the dose delivered to the patient.

Primary author: SADROZINSKI, Hartmut (SCIPP, UC santa Cruz)

Presenter: SADROZINSKI, Hartmut (SCIPP, UC santa Cruz)

Session Classification: After dinner POSTER session, with drinks: (All presenters are requested/encouraged to attend their posters; All participants are requested to participate the session, with drinks!)

Track Classification: Applications in Space, Medical, Biology, Material Sciences