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## [D05] The Timepix family of pixel detector readout chips

*Thursday 8 October 2020 22:00 (30 minutes)*

The Timepix family of pixel detector readout chips was started in 2005 following the request of colleagues from the EUDet Collaboration to provide timestamp information pixel-by-pixel on an adapted version of the Medipix2 photon counting readout chip. The family now includes Timepix2, Timepix3 and Timepix4. Timepix2 provides both arrival time and amplitude information using a frame-based readout with a sophisticated shutter functionality overcoming many of the limitations of the predecessor Timepix chip. In Timepix3 a data driven readout was implemented for the first time and the bin of the timestamp is reduced to 1.6ns. In Timepix4 the timestamp bin is further reduced to 200ps, the chip area is increased and the chip is designed to be tiled on 4 sides permitting a large area to be covered for the first time. The presentation will review the features and performance of these chips and highlight some original applications.

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**Session Classification:** Timing Detector II