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Status and Future Prospects of High Time Resolution Photon Counting Sensor Arrays

Tuesday 29 September 2015 09:00 (45 minutes)

Photon counting at a very large scale has recently become available, thanks to the introduction of CMOS single-photon avalanche diodes and analog/digital silicon photomultipliers. With the continuous technological push demanded by Moore's Law and the introduction of 3D integration, achieving ever increasing fill factors and near-picosecond timing resolutions with integrated time-to-digital conversion are becoming realistic goals in the near term. In this talk, I will review current and future photon counting sensors, looking at trade-offs and trends in the context of these technological advances, focusing at emerging applications and at the challenges they will bring.

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