UltraSiD, a novel 4D Sensor Concept

Friday, 16 August 2013 13:00 (1h 30m)

We propose to develop a fast, thin silicon sensor with gain capable to concurrently measure with high precision the space

(~10 $\mu m)$ and time (~10 ps) coordinates of a particle.

An integral part of the proposed sensors is the internal charge multiplication in silicon sensors, allowing to thin pixelated silicon sensors by at least a factor 10 and keeping the performance of thick sensors.

This will open up new application of silicon detector systems in many fields achieve four-dimensional highprecision

measurements. The basic sensor characteristics and the expected performance, the present status of sensors and readout electronics will be presented and the required R&D topics will be discussed.

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