

Hybrid pixel detectors for particle and X-ray detection

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Brace 211

4:00pm

Refreshments:

3:30pm, Brace 201

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Silicon pixel detectors have become an indispensable tool in high energy physics experiments. The first large area systems just finished their commissioning phase and are ready to take data at the LHC accelerator ring near Geneva. Distinct properties of these hybrid pixel detectors are its high frame rate capability and its very low noise. This awoke interest in other fields of physics, especially in synchrotron applications. For this purpose single photon counting devices with well defined energy thresholds have been developed. Today they are used for macromolecular crystallography, measurements with small- and wide-angle X-ray scattering, powder diffraction, etc.

This talk will give an introduction into the principles of silicon as a detector material and of hybrid pixel detectors. We will have a closer look at two operational systems and its applications: the CMS pixel detector for HEP experiments and the Pilatus II detector for synchrotron applications.

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