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Type: **Talk (20 min + 5 min discussion)**

## **Event Mode Neutron Detection for High Spatial and Temporal Resolution Imaging**

*Monday, 4 December 2023 13:40 (25 minutes)*

Recent developments in event driven camera systems allow the construction of a new type of scintillator-based event mode imaging devices. This type of detector records data for individual neutron interactions in a scintillator screen. By analyzing each event individually, improvements in temporal and spatial resolution as well as noise suppression are possible. At the same time, it has the same flexibility in terms of field of view and scintillator material as well as the continuous readout capability as traditional scintillator based neutron cameras.

The presentation contains a detailed explanation of the principles of event mode neutron imaging. Afterwards, the results from several measurements are shown to illustrate its capabilities. The main focus of the talk is on the combination of high temporal and spatial resolution for applications such as time of flight (ToF) imaging and modulation of intensity with zero effort (MIEZE).

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