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S. Mate: Simulation and Optimisation of Space Gamma-ray Camera SVOM/ECLAIRs : Detecting Gamma Ray Bursts and High Energy Transients

lundi 3 juin 2019 18:20 (10 minutes)

The Space Variable Object Monitor (SVOM) is a Chinese-French astrophysics mission for the study of high-energy transients, in particular Gamma-Ray Bursts. One of the key instrument on SVOM is the ECLAIRs gamma-ray camera which is a large field of view (FoV) coded mask imager working in the energy range of 4 -150 keV. The primary focus of the instrument is to detect and localize new GRBs with help of onboard trigger software (in near real-time). Due to limitations on onboard computing power, the onboard trigger uses conservative methods. Hence, an important part of the program is to develop a software tools to detect GRBs on ground with more elaborate methods. This is possible because all the detected photon events will be sent to the ground. The ground search will be used in parallel to the onboard software (to detect longer timescale / faint GRBs) as well as a substitute when the onboard trigger is switched off due to technical constraints. I'll will give a brief overview of SVOM mission in general and my PhD work which concerns the development of these ground tools. I'll cover different aspects of the work such as simulation of raw data to create near real observing scenarios (with background, non-transient X-ray sources and GRB events) and the methods we are working on to detect the GRBs in this data.

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Classification de Session: Students' presentations