



MACHINE LEARNING FOR ASTROPHYSICS

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Real-Time Detection of Cosmic Ray Systematic Glitches for the LiteBIRD satellite

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The LiteBIRD space mission aims to measure the polarised Cosmic Microwave Background with unprecedented sensitivity with a satellite orbiting the L2 point, making it susceptible to cosmic ray effects. Impacts of cosmic rays on high-sensitivity bolometers can cause systematic effects such as glitches and their mitigation and subtraction have been a key point of concern for past space missions such as the Planck telescope. For the LiteBIRD mission, due to the way the data will be sampled most of the cosmic ray glitches will not be visible in the transmitted data. In this work we will explore and discuss real-time methods to detect and possibly mitigate such glitches. We take inspiration from the work pursued at LHC to implement Neural Networks on FPGAs for fast real-time processing of large volumes of data.

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Session Classification: FlashTalks