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NIST focal plane technology relevant for LiteBIRD Johannes Hubmayr (NIST)

Wednesday 16 December 2015 10:10 (25 minutes)

I will discuss technology developed and fabricated at NIST that is relevant to the LiteBIRD satellite mission. This includes feedhorn-coupled, transition-edge-sensor (TES) polarimeter arrays, which are the baseline focal plane technology of the high frequency telescope as proposed in the US-contribution to the mission. Developed in collaboration with a large fraction of the US CMB community, feedhorn-coupled TES polarimeter arrays have been utilized in the South Pole Telescope Polarimeter (SPTpol) and the Atacama Cosmology Telescope Polarimeter (ACTPol). I will present an overview of the architecture; review on-sky performance; detail recent developments such as multichroic detector development on 150mm substrates for Advanced ACTPol and the production of 300 GHz arrays for the second flight of SPIDER; and comment on how to adapt the arrays for a space mission. Additionally, I will review SQUID-based multiplexer components designed and fabricated at NIST, which in the last decade have enabled over 30,000 mm/sub-mm bolometers to observe the sky from platforms around the world.

Presenter: Dr HUBMAYR, Hannes (NIST)

Session Classification: Detector