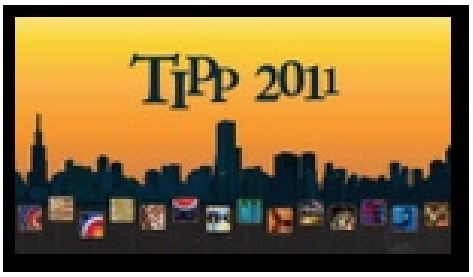

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The QUIET Pseudo Correlation Polarimetry for Measuring the CMB polarization

Thursday, 9 June 2011 15:10 (20 minutes)

QUIET is a ground-based experiment in Chile, designed to measure the CMB polarization.

QUIET currently has the largest array of Pseudo Correlation Receivers, utilizing High Electron Mobility Transistors (HEMT) technology, for detecting the CMB at 44 and 90 GHz. The HEMT technology, developed at JPL and Northrop Grumman, allows for operation at 26 Kelvin and cancellation of gain drifts by fast electronic switching.

The first Phase of QUIET achieved a sensitivity of about 70 microKelvin/sqrt(Hz), with gain-related systematic errors well below the statistical errors.

We discuss this design, and the improvements being made for the second phase of QUIET, which aims to increase the sensitivity by x3.

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