

Pico Veleta Atmospheric Noise Limits At Millimeter Wavelengths

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Abstract

In November 2007 and October 2008, we demonstrated a new camera for the 2 mm wavelength band, GISMO (Goddard IRAM Superconducting 2 Millimeter Observer), at the IRAM 30 m telescope in Spain. Based on a novel superconducting transition edge sensor bolometer array, GISMO features a compact optical design that should provide rapid imaging in its band. We detail the calculations made for GISMO to determine the atmospheric emission optical loading and resultant photon noise in the 2 mm band at Pico Veleta, and show confirming measurements obtained during the observing runs.