NIRST data simulation using temperatures of Lake Tahoe Validation Site
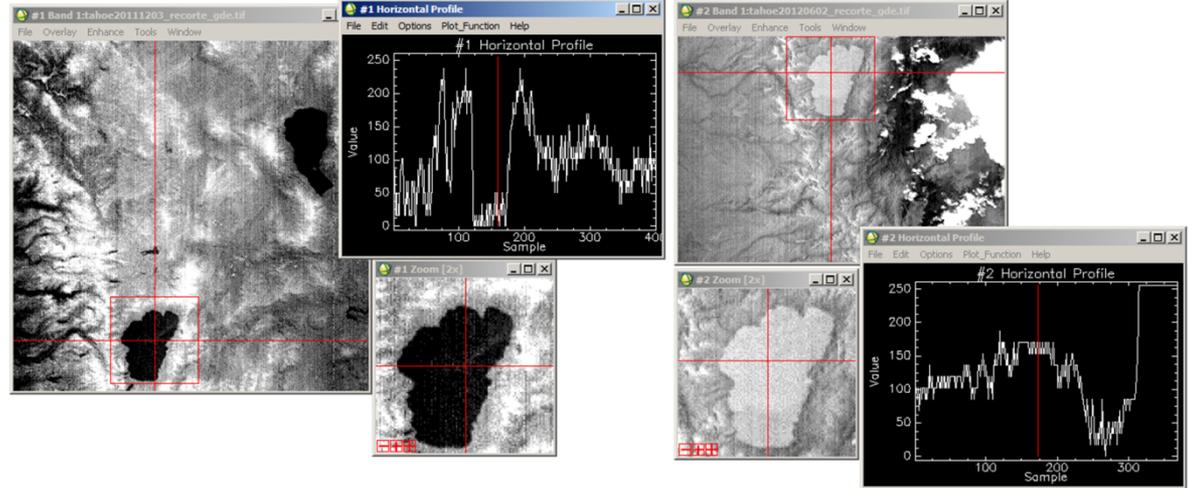
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Preliminary steps towards Validation

NIRST (New Infrared Sensor Technology) on board SAC-D/Aquarius satellite, a CONAE and NASA cooperation.

At-sensor radiances of 10.8 µm NIRST sensor band were simulated with MODTRAN for nearly all cloud free images acquired over Lake Tahoe since the launch of the SAC-D/Aquarius satellite in June 2011.

BT were estimated, giving a relative difference of - 8.5% in average, compared with the average physical temperatures at the lake, taken from Lake Tahoe Validation Website – JPL/NASA – by Simon Hook

NIRST acquisition on December 3, 2011   NIRST acquisition on June 2, 2012

Physical Temperatures — NIRST Spectral Response Function — Atmospheric Model — Geometric Conditions

Radiative Transfer Model MODTRAN

Simulated at-sensor radiances → brightness temperatures (BT)