



MEaSURES Land Surface Temperature from GOES Satellites

Rachel T. Pinker (1), Wen Chen (), Yingtao Ma (), Tanvir Islam (), Eva Borbas (), Chris Hain (), Glynn Hulley (), and Simon Hook ()

(1) University of Maryland, Dept. of Atmospheric and Oceanic Science, College Park, MD, (2) NASA Jet Propulsion Laboratory, Pasadena, CA, (3) University of Wisconsin–Madison, Space Science and Engineering Center (SSEC)/(CIMSS), WI, (4) NASA Marshall Space Flight Center, Huntsville, AL

Information on Land Surface Temperature (LST) can be generated from observations made from satellites in low Earth orbit (LEO) such as MODIS and ASTER and by sensors in geostationary Earth orbit (GEO) such as GOES. Under a project titled: “A Unified and Coherent Land Surface Temperature and Emissivity Earth System Data Record for Earth Science” led by Jet Propulsion Laboratory, an effort is underway to develop long term consistent information from both such systems. In this presentation we will describe an effort to derive LST information from GOES satellites. Results will be presented from two approaches: 1) based on regression developed from a wide range of simulations using MODTRAN, SeaWiFS Version 5.0 global atmospheric profiles and the CAMEL (Combined ASTER and MODIS Emissivity for Land) product based on the standard University of Wisconsin 5 km emissivity values (UWIREMIS) and the ASTER Global Emissivity Database (GED) product; 2) RTTOV radiative transfer model driven with MERRA-2 reanalysis fields. We will present results of evaluation of these two methods against various products, such as MOD11, and ground observations for the five year period of (2004-2008).