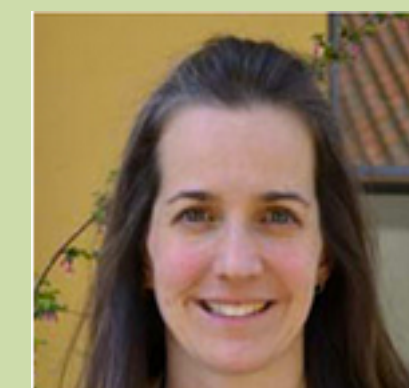# Ten years of the UW high spectral resolution global IR land surface emissivity (UWIREMIS) database

PN: IN53B-1741

Eva E. Borbas (eva.borbas@ssec.wisc.edu), Suzanne W. Seemann, and Robert O. Knuteson
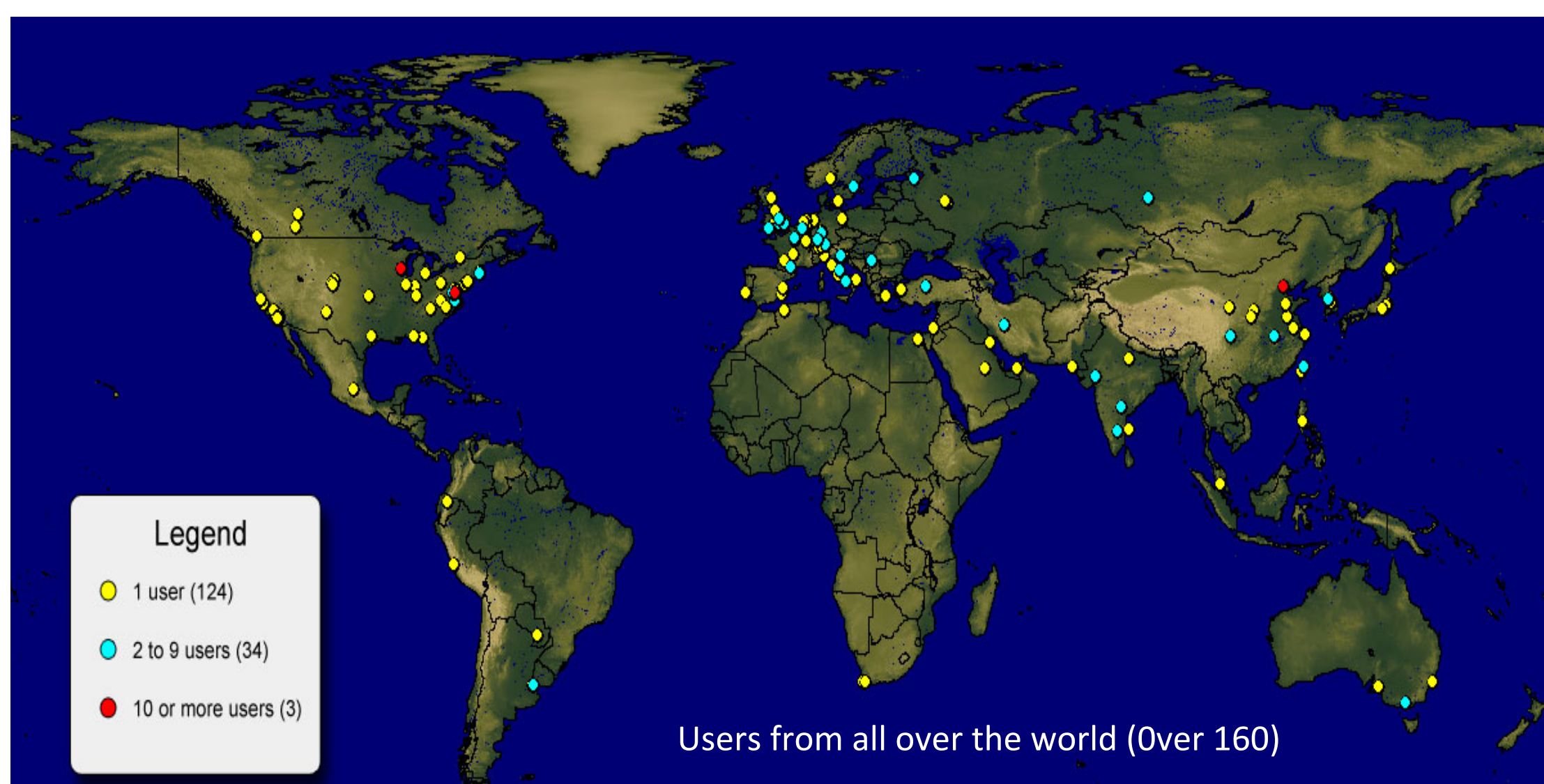Space Science and Engineering Center, University of Wisconsin – Madison, WI, USA

In memory of Suzanne Wetzel Seemann

Suzanne (Suzie) Wetzel Seemann died September 27, 2012 in an accident during a morning run with friends.
She was the lead developer of the UW Baseline Fit Emissivity Database during her research career at the SSEC from 2000 to 2006. She was a devoted mother, well respected scientist, talented teacher, skilled woodworker, and lover of nature.
We are very lucky to have known and worked with her. She will be sorely missed by all of us.
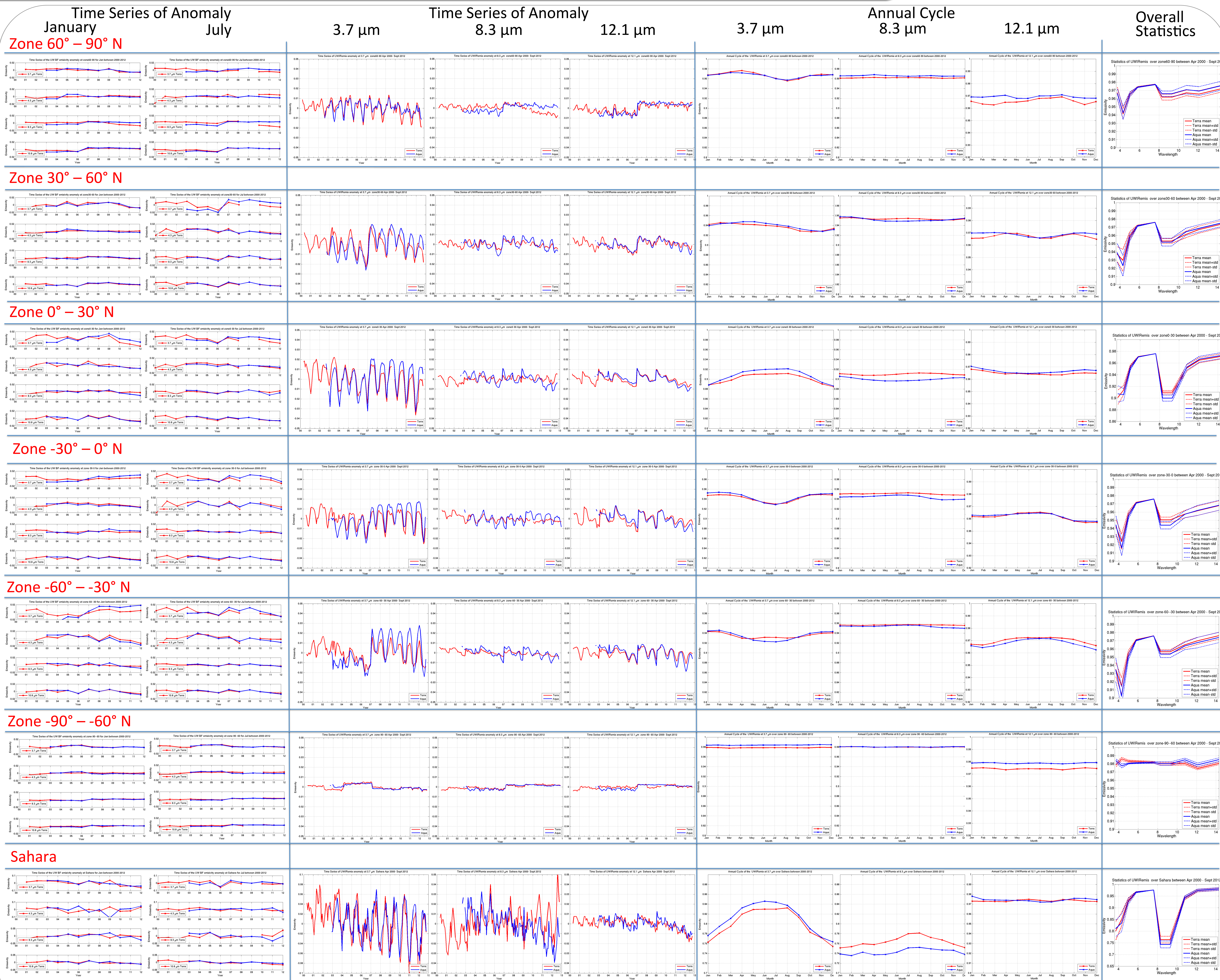This poster is dedicated to honor her life.

Abstract: The monthly, UW/CIMSS Baseline Fit (BF) global infrared land surface emissivity database (***Seemann et al., 2008, JAMC***) has been available for distribution since 2006 at the http://cimss.ssec.wisc.edu/iremis/ website and includes data from October 2002 at ten wavelengths (3.6, 4.3, 5.0, 5.8, 7.6, 8.3, 9.3, 10.8, 12.1, and 14.3 microns) with 0.05 degree spatial resolution. To derive high spectral resolution emissivity spectra, the UW High Spectral Resolution (HSR) IR Emissivity Algorithm was also developed. Applying the UW HSR Emissivity Algorithm to the UW BF emissivity data makes it possible to create a monthly instrument specific emissivity spectrum for any application involving forward model calculations such as retrieval methods and NWP assimilation or for use in studies of surface energy and water balance. This poster demonstrate the ten-year long database derived from the Aqua/MODIS and twelve-year long database from the Terra/MODIS data.

Legend
- 1 user (124)
- 2 to 9 users (34)
- 10 or more users (3)

Users from all over the world (Over 160)

The UW BF emissivity database is available at:
http://cimss.ssec.wisc.edu/iremis/

Time coverage::
Apr 2000/Aug 2002 - Dec 2006
    based on MYD11 V4.0 products
Jan 2007 – Sept 2012
    based on MYD11 V4.1 products

Note: Collection 4 data will be replaced by Collection 6 in 2013.

The BF emissivity at November 2011

3.7 µm | 8.3 µm
4.3 µm | 9.3 µm
5.0 µm | 10.8 µm
5.8 µm | 12.1 µm
7.6 µm | 14.3 µm

0.7 0.75 0.8 0.85 0.9 0.95 1
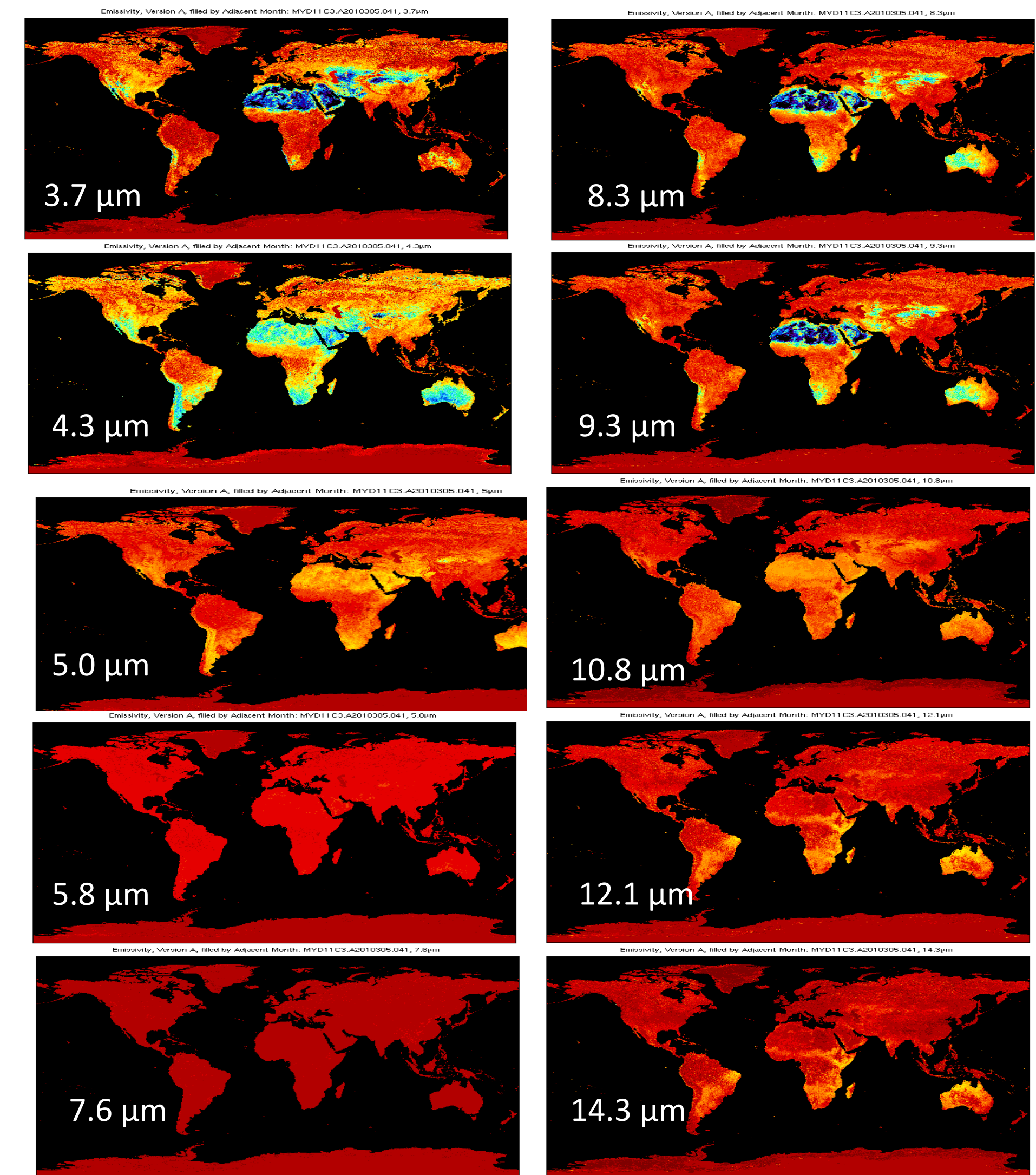
Users :
- MODIS MOD07 Atmospheric Retrieval Algorithm MOD07 (UW, NASA DAAC)
- IMAPP/AIRS and MODIS retrievals (UW)
- RTTOV (EUMETSAT/UKMO)
- Climate Monitoring SAF (EUMETSAT)
- AIRS Retrieval of Dust Optical Depths (UMBC/ASL)
- Official AIRS atmospheric retrievals V6 (NASA/JPL)
- IASI-Metop Cal/Val (CNES, France)
- IASI retrievals (EUMETSAT, UW)
- Retrieval of hot spot data from AATSR (ESA)
- Energy balance from ASTER over glacier (Univ of Milan)
- AIRS trace gas retrieval (Stellenbosch University, South-Africa, JCET-UMBC)
- Education (Seoul National Univ.; NTA, Konstantin)
- SEVIRI water vapor retrievals (UW, EOS)
- SEVIRI aerosol retrieval (Univ Oxford)
- SEVIRI cloud and ozone retrieval (EUMETSAT)
- SEVIRI cloud phase, other cloud top parameter retrievals (KNMI)
- LST retrievals from GOES-R (NOAA NESDIS)
- OSS calculations (AER)
- CRTM (JCSDA)
- AIRS NWP model assimilation (UKMO)

	Time Series of Anomaly		Time Series of Anomaly			Annual Cycle			Overall Statistics
	January	July	3.7 µm	8.3 µm	12.1 µm	3.7 µm	8.3 µm	12.1 µm	

Zone 60° – 90° N
Zone 30° – 60° N
Zone 0° – 30° N
Zone -30° – 0° N
Zone -60° – -30° N
Zone -90° – -60° N
Sahara