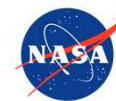


Machine Learning Datasets for the Earth's Natural Microwave Emission



PI: Carl Mears, Remote Sensing Systems, Santa Rosa CA

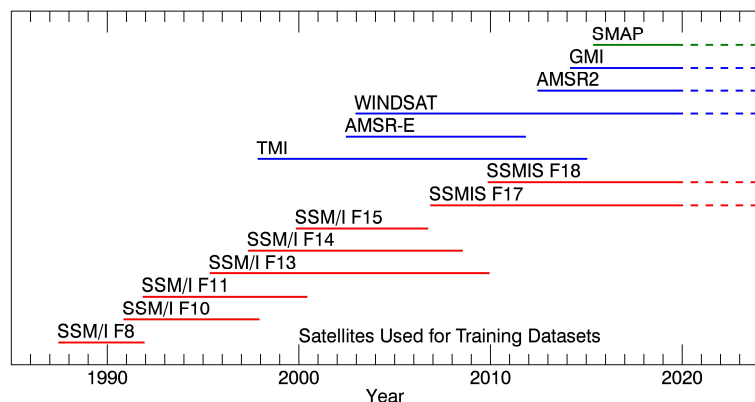
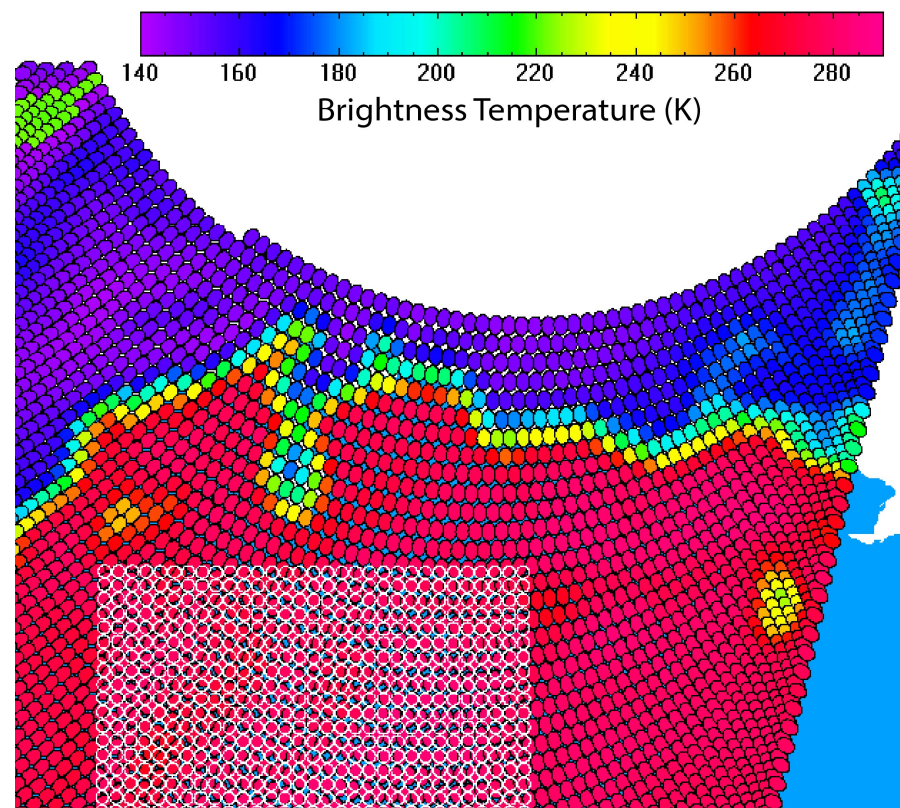
Passive microwave measurements contain a wealth of information and are already used to retrieve many useful parameters about the Earth. But the use of fundamental radiance data is challenging for researchers that are not satellite experts.

- Complicated swath and footprint geometries
- Raw radiances depend on incidence angle, exact measurement frequency/bandwidth
- Surface measurements influenced by atmosphere
- Hard to collocate in time and location with ancillary information

We know how to deal with these issues and do so to develop our own algorithms. In this project we will do the detailed work to ease the use of microwave measurements for all.

Product:

- Precisely intercalibrated microwave measurements resampled onto circular footprints on a regular lat/lon grid, referenced to a common measurement band and incidence angle.
- Model estimates of the influence of the atmosphere -> surface emission.
- Collocated ancillary data important to develop new algorithms on the same grid.
- Freely shared using common formats and download/subsetting tools.



Our goal is to lower barriers and enable non satellite-experts to rapidly develop and test new algorithms to extract new and valuable information from the existing set of microwave measurements.

For more information on our previous work see www.remss.com