Remote Sensing and Modeling of Surface Properties

Subgroup: Radiative Transfer

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NWP Centre Survey

	Tskin	Emissivity		
		land	ocean	Sea-ice
Infrared	Single, banded, independent		RT default, Atlas, User defined	
Microwave	…		…	

Tskin
> Single temperature spectrally independent
> banded (same Tskin for multiple "bands" of channels)
> Independent temperature for each channel

Emissivity
> Default values from radiative transfer model for surface type
> Atlas values (resolution both spatially and temporally)
> A User-defined value from measurement, analysis or another method

Land Emissivity Atlas Intercomparison

Hosted on the ITSC sub-group webpage this will largely be links to study which describe the availability of the products; along with a brief description

These studies shall describe the diurnal and seasonal variability in these atlases, as well as their zenith angle dependence and their uncertainties!

Infrared
    E. Borbas: Comparison of MODIS and IASI EUMETSAT (Zhou retrieval)
    I. Trigo: SEVIRI Land-SAF emissivity product

Visible/NIR
    J. Bidot and T. Greenwald: extension of MODIS BRDF for NWP use

Microwave
    J.L. Moncet comparison of CNRM, TELSEM and AER products
    R. Ferraro blended products used for precipitation estimation
    P. Aires and C. Prigent development of TELSEM

Tskin NWP intercomparison

Part I (assess state of LSM model)

Discuss with Land Surface Modeling (LSM) teams at NWP centers, what input would be useful to help them improve land surface temperature with an emphasis on radiance assimilation.

Part II (tentative – but possible funding structure available)

 Intercomparison of variables such as:

    - ½-degree, global 12-hourly intercomparison of NWP and analyzed Tskin
    - Providing a downwelling SW flux will separate the diurnal cycle, as well as the model clear/cloudy determination
    - This will be over all surfaces (land, ice, snow)
     - This will be a sensor by sensor intercomparison for common datasets

Analyzed Tskin currently produced by the following centres:
      Meteo France, UK MetOffice and ECMWF