



Assessment and improvement of the AMSR-E SWE algorithm. Toward a new philosophy for retrieval ?

Marco Tedesco

CCNY-CUNY/NASA, Earth And Atmospheric Sciences, NY, United States (mtedesco@sci.ccny.cuny.edu)

I report results regarding the assessment and improvement of the retrieval of snow water equivalent (SWE) from spaceborne microwave brightness temperatures, and in particular from the Advanced Microwave Scanning Radiometer (AMSR-E). I report the validation of the current AMSR-E SWE operational product using Snow Data Assimilation System (SNODAS) data and snow depth values measured by weather stations of the World Meteorological Organization (WMO). Density values used in the AMSR-E SWE product are compared with those derived from SNODAS and the results are discussed. Effective grain size is also estimated from the inversion of an electromagnetic model and the relative spatio-temporal distribution discussed in conjunction with the dynamic coefficients used to derive snow depth from the brightness temperature differences.

A new modular physically-based approach that might be suitable for operational use is proposed and discussed.