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A new physically-based operational SWE algorithm for AMSR-E and AMSR2

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Daily operational estimates of SWE were produced from the Advanced Microwave Scanning Radiometer for EOS (AMSR-E) observations, launched on NASA's EOS Aqua spacecraft on May 4, 2002. The maintenance, validation and improvement of the current algorithm is achieved by refining key aspects of the retrieval algorithm and continuing its validation. Supporting the maintenance of the current product is essential for the ultimate development of a robust long-term data set, potentially extending back 30 years.
Here, I discuss a new operational SWE algorithm. In particular, I will discuss the introduction of an emissivity-based approach rather than one based on brightness temperatures; I will introduce the use of new dynamic coefficients used to relate measured Tb values with SWE through climatological data and a microwave emission model; I will report on density, which will be dynamically derived from the retrieval algorithm rather than being static; finally I will mention the wet/dry snow detection for excluding those pixels where wet snow is assumed to be present.
I will finally discuss the plans over the next few years concerning the evolution of the operational algorithm, and a roadmap for its further improvement and its application to SSM/I and AMSR2.