Hydrology and Earth System Sciences Discussions

Interactive
Comment

Interactive comment on "Strategies for validating and directions for employing SMOS data, in the Cal-Val project SWEX (3275) for wetlands" *by* W. Marczewski et al.

W. Marczewski et al.

wmar@cbk.waw.pl

The review was deep and relevant to real drawbacks of the paper, though is not easy for fast responding by few technical changes. Therefore, this letter is for announcing the aim of rebuilding the paper, and responding on main issues.

Major issue /1: Postulated statistical analysis and data/figures supporting the claims, shall be done and included on the base of SMOS data from August 23 till October 2010. SMOS data for the wetlands Biebrza, Polesie are available for us since 23 August, so

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

we were not able doing that in the time of the submission on July 24, 2010.

We understate the postulate on forward modeling BT at test places by CMEM, and aim presenting them as a part of validating initial conditions for the retrieval from L1C data.

The topic RFI shall be developed in a separate chapter with conclusions.

We appreciate that two topics 1) TBR sites, and 2) The model of Usowicz, deserved on the interest. However, we don't aim developing the second one into a separate paper, because the implementation of this concept is not yet fully developed for the imaginary part of the dielectric constant. The idea of a statistical-physical principle of the model is developed for thermal properties of soils, but is not completed for the imaginary part of the dielectric constant. We still aim presenting that now, because the principle of building the model on the base of a combinatorial play with spheres is quite much universal in that cases when the soil under modeling is a mixture of fractions in different compositions. In our understanding, the aim of this concept corresponds to the aim of CMEM in representing input data and initial conditions for behaving the radiation transfer equation (RTE). The fundamental difference is in the concern on RTE for CMEM, but commons are also in representing the heterogeneity by a mixed composition. Domains and means are different, but the aim of representing a mixed subject of modeling is a common.

Major issue /2: Redundant information shall be withdrawn.

Major issue /3: The introduction shall be rewritten, especially explaining the idea of extending validations in selected test sites on employing SMOS data on large areas in the country.

Major issue /4: Citing internal reports shall be avoided, and corrected.

Major issue /5: Referring SMOS pixel, we stay with the DGG pixel which is approximately constant at middle latitudes in the ground range measure and is about 15km in diameter. Referring SMOS resolution we assume that one needs at least two pixels for

Interactive
Comment

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

stating the shortest spatial distance available for determining the radiometric difference what makes the resolution 30km. The misleading use of the pixel size for determining the resolution shall be avoided.

Major issue /6: 5 pages on the Fresnel equation shall be avoided and stay only referred to proper references. Our understanding of optimization shall be expressed by particular examples for the test sites Biebrza and Polesie by conclusions.

Major issue /7: The use of ASAR was a way of obtaining the land surface coverage in high and low vegetation area classes as bit masks, for filtering vegetation indexes from spectral data of MERIS. Sometimes that is useful employing predetermined bit masks from other type of observations. For that purpose we also use CORINE data, which serves us only the source of auxiliary masks. Real and temporal values of vegetation data is taken from spectral observations. ASAR serves one but reliable ancillary purposes for validation. Another data source Grace was referred only for expressing the need of confronting conclusions from SMOS to other gravitational observations in the scales larger then SMOS. That shall be explained without using the figures from Grace.

Major issue /8: The paper was submitted before 24 July and then L2 data was available for us only in few 42 DGG pixel subsections. Since 23 August we have about 4000 DGG pixel data, and the paper shall be updated to that representation in data resources.

Proper version of the rebuild paper shall be submitted in the discussion yet. We are really grateful for a constructive review.

Wojciech Marczewski

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 7, 7007, 2010.