BEC L4 soil moisture product is now "all-weather"

Soil moisture at fine-scale (BEC L4 soil moisture product) can now be estimated under all-weather conditions. A delayed 5-year (2010-2015) data set covering the Iberian Peninsula is already available, and maps from 2015 onwards are provided in near real-time. This is BIG news! The L4 product is obtained by combining SMOS brightness temperatures with higher spatial resolution MODIS information into fine-scale soil moisture estimates [1,2]. In all previous releases, the presence of clouds masked the information from MODIS and therefore the fine-scale soil moisture. In the new L4 version 3.0 or "all-weather" product, we are including additional information in the downscaling algorithm, which allows fine-scale soil moisture mapping from space independently of cloud cover.

With the L4 all-weather product, we plan to extend the downscaling approach to other climatic regions. See Fig. 1 for an example of its application over Europe on July 1, 2014 (ascending passes). The version 2.0 is also provided (Fig. 2) to illustrate the differences between the two versions.

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Fig.1. Soil moisture map at 1 km spatial resolution (with version 3.0 downscaling), from 1/07/2014 (AM).

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Fig.2 Soil moisture map at 1 km spatial resolution (with version 2.0 downscaling), from 1/07/2014 (AM).

A quality report of the new product can be found here. This product, as well as its applicability in forestry applications (forest fire prevention and forest die-off predictability) will be presented at the 2nd SMOS Science Workshop in Madrid next week.

Stay tuned!!

Note: the previous release of the L4 product over the Iberian Peninsula can still be accessed (<u>version 2.0</u>)

- [1] Piles, M., N. Sánchez, M. Vall-llossera, A. Camps, J. Martínez-Fernández, J. Martínez, V. González-Gambau (2014) "A Downscaling Approach for SMOS Land Observations: Evaluation of High-Resolution Soil Moisture Maps Over the Iberian Peninsula", IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, vol.7, no.9, pp.3845-3857.
- [2] Sánchez-Ruiz, S., M. Piles, N. Sánchez, J. Martínez-Fernández, M. Vall-llossera, A. Camps (2014), "Combining SMOS with visible and near/shortwave/thermal infrared satellite data for high resolution soil moisture estimates", Journal of Hydrology, vol. 516, pp. 273-283, http://dx.doi.org/10.1016/j.jhydrol.2013.12.047.