**CALIMAS: CALibration – validation of Interferometric Microwave And Salinity products. Overview and current status**

Adriano CAMPS1,2, Jordi FONT3, Ignasi CORBELLA3, Mercé VALL·LLOSSERA1, Jordi MALLORQUÍ2, Emilio GARCÍA2, Alonso HERNÁNDEZ-GUERRA5, Marcos PORTABELLA4, Alicia LAVÍN5, Antonio RIUS6, Aida FERNÁNDEZ RÍOS7, Joaquim BALLABRERA-POY8,

1RS Lab, UPC / TSC, Campus Nord, Blding D3, 08034 Barcelona, SPAIN
2Institut d’Estudis Espacials de Catalunya / CRAE-UPC, SPAIN
3Institut de Ciències del Mar CSIC, P. Marítim 37-49, 08003 Barcelona, SPAIN
4Faculty of Marine Sciences, ULPGC, SPAIN
5KNMI, THE NETHERLANDS
6Instituto Español de Oceanografía, SPAIN
7Institut d’Estudis Espacials de Catalunya / ICE-CSIC, SPAIN
8Instituto de Investigaciones Marítimas-CSIC, SPAIN

**Objectives:**
- The CALIMAS project represents a step forward in the French contribution to the development of SMOS, both in the instrument side and in the scientific side.
- This poster summarizes & updates the activities foreseen in the frame of the SMOS CAL/CAL.

**Objective 1: Assessment of SMOS Calibration, Stability and Image Reconstruction Algorithms (A. Camps, UPC)**

- a) Assessment of the accuracy of calibration techniques by noise injection, redundant space calibration (RSC) and fringe-wash function estimation.
- b) Assessment of instrument’s stability by looking at instrument parameters’ drift during complete orbits at different epochs.
- c) Improvement of image reconstruction algorithms, evaluating the impact of different visibility function windows, and instrument’s mode (dual vs. full-pol mode).
- d) Assessment of external calibration techniques of SMOS images to remove brightness temperature (TB) biases.
- e) Study of inversion algorithms including the residual bias in TB image and showing convergence even with noisy data.

**Objective 2: Assessment of Salinity Retrieval Algorithms and Validation of SMOS Salinity Products by In Situ Oceanographic Measurements (J. Font, ICM)**

- a) Improvement of the surface roughness effect implementation in salinity retrieval algorithms.
- b) Development of surface drifters for SMOS salinity validation.
- In situ measurements for SMOS OS validation:
  - a) Canary islands region: stable area of low TB in the eastern border of the N Atlantic subtropical gyre.
  - b) Gulf of Biscay (coastal NE Atlantic): regular monitoring of a relatively steady area.
  - c) Mediterranean sea: exploring the limits of SMOS OS retrieval.
- d) Atlantic ocean: use of existing activities.

**Objective 3: Combined assimilation of SMOS products and in situ measurements in an ocean circulation model (E. García, ICM)**

- b) Combined assimilation of salinity data during the SMOS cal/val period.

**Objective 4: Verification of SMOS image reconstruction and OS (and SM) retrieval using a small airborne MIRAS (SAM or SMOSillo) (A. Rius, IEEC)**

- a) Instrument preparation and programming.
- b) Airborne campaigns with HUT-Skyvan.
- c) Data processing and geophysical variables retrieval.
- d) Determination of ocean surface roughness by GPS reflectometry.

**Objective 5: Assessment of mixed pixel effects and disaggregation techniques (M. Vall·llossera, UPC)**

- a) Inter-comparison of SMOS data over the Lleida plateau region and comparing it to model predictions using a SEPS version with a high-resolution brightness temperature generator.
- b) Evaluation of disaggregation techniques to improve the spatial resolution of the data.

**Conclusions:**
- Most activities continue as originally foreseen.
- SAR data processing (T) will depend on personal availability.
- New instruments available (Light-L band radiometer h: 10-350 m, 45 min, 5 kgr.), other refurbished (LAURA) for simpler and cheaper operation.

**Acknowledgements:**
- The Spanish participation in SMOS CAL/VAL is being sponsored through MIDAS-4 and MIDAS-5 projects from the Spanish Space National Plan.