



## **Combined Airborne Radio-instruments for Ocean and Land Studies (CAROLS)**

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The CAROLS, L band radiometer, is built and designed as a copy of EMIRAD II radiometer of DTU team. It will be used in conjunction with other airborne instruments (in particular the C-Band scatterometer (STORM) and IEEC GPS system) in coordination with in situ field campaigns. Common objectives for land and sea surface investigation are i) to provide independent measurements of Tb over specific well-documented sites, ii) to document the spatial variability of Tb within a SMOS pixel iii) to validate and improve inversion algorithms, iv) to prepare the operational use of SMOS data in models, v) to study the synergy between passive and active microwave data. The approach is to implement an L-Band radiometer on board the French research airplane ATR42 with C- band polarimetric radar. Measurements will be proposed in two configurations: -with only radiometer with two incidence angles nadir and 33.5° incidence angle, -with C band radar multi-incidence configuration and one radiometer measurement at 33.5°. Airborne campaigns during the commissioning and operational phases will concern five sites (South of France (SMOSMANIA), Landes forest (France), Valencia Anchor Station (Spain), Ocean (Gascogne and Brittany), and probably West Africa.