



Contribution ID: 24

Type: Oral presentation

## RALI: the French radar-lidar airborne platform for cloud dynamics and microphysics studies

*Tuesday, 11 June 2019 12:40 (20 minutes)*

Mobile Radar-Lidar facilities are unique tools for cloud process analyses and case studies. The radar-lidar airborne platform (RALI) can be deployed on board the French SAFIRE aircraft (Falcon 20 or the ATR42 depending on the targeted areas). RALI consists of a combination of the multi beam 95 GHz Doppler radar RASTA (RADar SysTEM Airborne) and the Doppler high spectral resolution (D-HRS) lidar LNG (Leandre New Generation). Both instruments were developed at LATMOS and DT-INSU (<http://rali.projet.latmos.ipsl.fr>). LNG operates at three wavelengths (355 nm, 532 nm, 1064 nm), including depolarization and D-HRS at 355 nm. This synergistic platform has been deployed in many field campaigns on SAFIRE aircraft since 2006 combined with radiometry for SW and LW flux measurements (for example AMMA, HYMEX, CHARMEX, HAIC, NAWDEX and EXAEDRE). The unique configuration of the RASTA radar allows for the retrieval of the three-dimensional cloud/precipitation wind above and below the aircraft (data collected during HYMEX data have been recently assimilated in AROME). Ice clouds, water cloud top and aerosol properties (local scale dynamics and radiative parameters) can also be retrieved thanks to the D-HRS lidar. Combination of both instruments give access to an unprecedented set of parameters over the whole atmospheric column. We will present the platform and its capability in terms of microphysical and dynamical processes studies and some applications.

**Primary author:** DELANOË, Julien (IPSL, UVSQ Université Paris-Saclay, Sorbonne Université, CNRS)

**Co-authors:** Dr PELON, JACQUES (/IPSL, UVSQ Université Paris-Saclay, Sorbonne Université, CNRS); Dr CAZENAVE, QUITTERIE (/IPSL, UVSQ Université Paris-Saclay, Sorbonne Université, CNRS); Mr CAUDOUX, CHRISTOPHE (/IPSL, UVSQ Université Paris-Saclay, Sorbonne Université, CNRS); Mr LE GAC, CHRISTOPHE (/IPSL, UVSQ Université Paris-Saclay, Sorbonne Université, CNRS); Dr IRBAH, ABDENOUR (LATMOS/IPSL, UVSQ Université Paris-Saclay, Sorbonne Université, CNRS); Mr MARISCAL, JEAN-FRANCOIS (/IPSL, UVSQ Université Paris-Saclay, Sorbonne Université, CNRS); Dr BRUNEAU, DIDIER (/IPSL, UVSQ Université Paris-Saclay, Sorbonne Université, CNRS); Mr BLOUZON, FREDERIC (DT-INSU); Mrs COLLOMB, HELENE (/IPSL, UVSQ Université Paris-Saclay, Sorbonne Université, CNRS); Dr FLAMANT, CYRILLE (/IPSL, UVSQ Université Paris-Saclay, Sorbonne Université, CNRS); Dr RIVIERE, GWENDAL (LMD/IPSL, ENS, PSL Research University, École Polytechnique, Université Paris Saclay, Sorbonne Universités, CNRS); Dr CAUMONT, OLIVIER (CNRM, Université de Toulouse, Météo-France, CNRS); Dr DEFER, ERIC (LA, Université de Toulouse, CNRS)

**Presenter:** DELANOË, Julien (IPSL, UVSQ Université Paris-Saclay, Sorbonne Université, CNRS)

**Session Classification:** Clouds - Chair: Irina Sandu

**Track Classification:** Workshop: Observational campaigns for better weather forecasts