



Contribution ID: 13

Type: Oral presentation

Synergetic use of field campaign observations and detailed simulations to improve NWP models at Météo-France

Monday, 10 June 2019 15:00 (30 minutes)

Météo-France/CNRM has a long experience and know-how in designing field experiments for developing and improving physical parameterizations for atmosphere, continental surfaces and ocean coupled models. The most outstanding field campaigns of the last decades include those coordinating in CAPITOUL on urban boundary layer in 2004-2005 (Masson et al, 2008), in AMMA on African Monsoon in 2006 (Redelsperger et al, 2006), in HyMeX on Mediterranean heavy precipitation and flash-floods in 2012 (Ducrocq et al, 2014) and on dense water formation induced by strong regional winds in 2013 (Estournel et al, 2016) and, for the near future ones, SOFOG3D on fog in winter 2019-2020 and HyMeX-LIAISE on the human imprint on atmosphere-land surface Interactions over semiarid regions in spring and summer 2020.

The aims of the presentation is to describe the methodologies that are developed to make use of these field campaign observations for improving the physical parameterizations (e.g. microphysics, turbulence, land surface schemes, urban surface models, air-sea fluxes,...) of numerical models. The methodologies often include a combine use of field campaign observations and of detailed model simulations, such as Large Eddy Simulations.

Ducrocq, V., et al, 2014: HyMeX-SOP1, the field campaign dedicated to heavy precipitation and flash flooding in the northwestern Mediterranean. *Bulletin of the American Meteorological Society*, **95**, 1083-1100.

Estournel, C., et al., 2016: HyMeX-SOP2: the field campaign dedicated to dense water formation in the northwestern Mediterranean. *Oceanography*, **29**, 196-206.

Masson, V., et al., 2008: The Canopy and Aerosol Particles Interactions in TOulouse Urban Layer (CAPITOUL) experiment, *Meteorol. Atmos. Phys.*, **102**, 135-157.

Redelsperger, J., C.D. Thorncroft, A. Diedhiou, T. Lebel, D.J. Parker, and J. Polcher, 2006: African Monsoon Multidisciplinary Analysis: An International Research Project and Field Campaign. *Bull. Amer. Meteor. Soc.*, **87**, 1739-1746.

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Session Classification: From models to observations and back - Chair: Linus Magnusson

Track Classification: Workshop: Observational campaigns for better weather forecasts