

Workshop BLLAST

Wageningen 8-9 February 2016

Detailed Programme

---- Monday 8 February ----

9:00-9:15 Welcome words and introduction

1. Integrating overview of all processes controlling the Lannemezan Boundary Layer.

Chairs: Oscar Hartogensis & Fabienne Lohou

9:15-10:15

- David Pino: Inter-comparison exercise using meso-scale models (WRF, MESO-NH, AROME) integrating surface processes, boundary-layer dynamics and meso-scale forcings

10:15-10:45 Coffee

In this session, (S) corresponds to short talks (~ 5 min, a few slides on previous results with only main message)

(L) corresponds to longer talks (~ 15-20 min, for new results or inputs)

2. Surface+MesoScale: the representation of the surface fluxes by mesoscale models

Chairs: Oscar Hartogensis & Fabienne Lohou

Diagnostic : the area-averaged flux mapping, which was based on the measured flux and the land-use map (compare LU-maps model vs real LU maps, compare simulated flux-maps vs measured flux-maps, compare flux-maps model vs true fluxes using model landuse map)

Questions : In comparing observations versus model results, do we get a similar impact in the comparison if we do the analysis at the highest grid resolution of mesoscale and more detailed land use mode or if we use operational resolution ? Is the land-use map used appropriate ? What do we learn from an area-averaged flux mapping approach ?

10:45-11:30

- (S) Wayne Angevine: (by David) "Land surface spinup for episodic modeling"
- (L) Oscar Hartogensis, David Pino, Fabienne : (task 4 intercomparison group) "Mesoscale models confronted with true landuse- and flux maps"

3. Surface+BoundaryLayer: the vertical structure of the low troposphere linked to surface processes

Chairs: Oscar Hartogensis & Fabienne Lohou

Diagnostic : Previous and new studies based on observations

Questions : Do we need a smooth transition regime between CBL to SBL at the surface (including an adequate scaling)? How does this transition affect the formation/representation of the residual layer? What is the role of surface heterogeneity (different length scales of non-uniformity)? How do the large-eddy simulation studies have reproduced this vertical structure interacting with surface processes?

11:30-12:30

- (S) Anneke van de Boer: (by Arnold) "Detection of Entrainment Influences on Surface-Layer Measurements during BLLAST"
- (S) Fabien Gibert: "Synthesis of afternoon transition turbulence decay revisited by Doppler Lidar"
- (L) Erik Nilsson: "Upon scaling of near-surface TKE in the afternoon transition"
- (S) Clara Darbieu: (by Marie) "Evolution of turbulence structure during the afternoon transition"
- (S) Estel Blay: (by David) "Countergradient heat flux and Lifted temperature minimum near the surface"
- (S) Jochen Reuder: "effect of surface heterogeneity as seen by SUMO"
- (S) Antonia Englberger: (by Marie) "case study of 1 July, diurnal cycle and impact of roughness heterogeneity"

12:30-14:00 lunch

14:00-14:30

Continuing Session 3 more time needed

4. Boundary Layer+MesoScale: The vertical structure of the low troposphere interacting with mesoscale processes

Chairs: David Pino & Jordi Vila

Questions : How do the models do in representing the vertical profile of the low troposphere during the transition ? How do the large scale forcing (subsidence, advection, shear) influence these vertical profiles?

14:30-15:30

- (L) Mariano Sastre: "WRF evaluation on atmospheric boundary-layer transitions and diurnal cycles"
- (L) Eric Bazile: "Mesoscale advection from AROME: computations and some analysis"
- (S) Henk Pietersen & Jordi Vila G. de A.: mesoscale forcings in case of 25 June

15:30-16:00 T-break

5. MesoScale: 2D and 3D circulation patterns

Chairs: David Pino & Jordi Vila

Diagnostic : exploration of a North-South vertical cross section across the Vallée d' Aure, averaged over 10 km wide. Comparisons between airplane spatial exploration and modelled horizontal cross sections.

Questions : Can we understand the mountain-plain circulation, and its interaction with the evolution of the CBL structure shown in (1)? How do the models differ each other on this aspect, and why? Can we understand more of the complexity of the mesoscale situation from the model outputs? And how can this impact on the profile inter-comparison and the understanding of the CBL main processes understanding?

16:00-17:00

- (L) Maria Antonia Jimenez Cortes: "The influence of the Aure valley on the boundary-layer features observed during the BLLAST experimental field campaign"
- (L) Marie Lothon, David Pino: task 3 of intercomparison - "Observed and modeled spatial variability during 25 June"

18:00 – Drinks and dinner at Loburg (Wageningen downtown)

----- Tuesday 9 February -----

Chair: Marie Lothon

6. Open Session Part 1

Talks should be around 10-12 min, followed by about 5 min questions.

9:00-10:30

- Astrid Lampert: Turbulence and low-level jet: a case study for 2 July 2011
- Line Båserud: 'Heat fluxes estimated from temperature and humidity profiles from the RPAS SUMO during the BLLAST campaign'
- Joachim Reuder: "Proof of concept of turbulence measurements with SUMO"
- Lucie Rottner: A new downscaling method for sub-grid turbulence modeling
- Chiel van Heerwaarden: Growth and decay of a convective boundary layer over a surface with a constant temperature

10:40-11:10 Coffee

7. Open Session Part 2

Talks should be around 10-12 min, followed by about 5 min questions.

11:10-12:40

- Ivo van Hooijdonk: Early Warning Signals for Regime Transition in the Stable Boundary Layer
- Bas van de Wiel: A lumped parameter view on nocturnal boundary layer dynamics
- Fred Bosveld: The CESAR observational program, new developments.
- GJ Steeneveld: Forecasting radiation fog at climatologically contrasting sites: evaluation of statistical methods and WRF (Carlos Roman's work)
- Nathalie Theeuwes: Urban Boundary Layers
- GJ Duine: "Down-valley winds in stable stratification - results of the KASCADE field experiment"

12:40-14:00 Lunch

14:00-15:00 Last talks if more time needed, and/or Wrap-up1

15:00-15:30 T-break

15:30-17:00 Wrap-up

Wrap up discussion will address:

- Integrating processes and observations through the mesoscale intercomparison (based on the Monday session)
- Synthesis and potential efforts for other research studies
- A review of the ACP special issue and publications in other journals
- Discussion on (a) possible synthetic publication(s) on BLLAST results
- A few words and an update on the database

---- Wednesday 10 February ----

Visit of CESAR in Cabauw

- 08:30 Leaving Wageningen (shuttle)
- 09:30 Arriving Cabauw
- 9:45 Introductory talk Fred Bosveld
- 10:15 Visit surface site (radiation, radar,...) and climbing tower (if possible)
- 13:30 Return to Wageningen