

BLLAST Newsletter August 2013

Report on the workshop that took place in Bergen, Norway, 14-16 August 2013

The workshop took place in the historic building of the Geophysical Institute, University of Bergen, nicely organized by Joachim Reuder and Line Båserud.

The objective of the workshop was to interact around our ongoing studies, work together on specific issues and analyses, and discuss new perspectives.

Note the workshop webpage at <http://bllast.sedoo.fr/workshops/august2013/>.



Photo: Erik Nilsson

List of presentations : *(Presentations are all available on the webpage)*

Eric Bazile (CNRM-GAME, Météo-France, Toulouse): Weaknesses of forecast models, that could be addressed with BLLAST dataset

Wayne Angevine (NOAA, Boulder): Soil moisture initialization for fine-scale episodic modeling.

Ian Faloona (University of Davis, California): Measuring divergence & mean vertical velocities during the afternoon transition

Mariano Sastre Marugan (Universidad Complutense de Madrid): Sensitivity of LSM and PBL schemes in WRF simulations of the Atmospheric Boundary Layer during the BLLAST campaign

Eric Pardyjak (University of Utah, Salt Lake City): Understanding the behavior of fluxes and variance in the surface layer during evening transition

Anneke van de Boer (University of Wageningen): Entrainment influences on surface-layer measurements; detection and impact on Monin-Obukhov similarity theory

David Pino (Universitat Politècnica de Catalunya, Barcelona Tech.) : Role of the residual layer and large-scale subsidence on the development and evolution of the convective boundary layer

Marie Lothon (University of Toulouse): Case study of 20 June 2011: LES set up and addressed issues

Clara Darbieu (University of Toulouse): Vertical and temporal evolution of turbulence spectra in the late afternoon transition

Fabienne Lohou (University of Toulouse): TKE decay at surface during BLLAST

Erik Nilsson (University of Uppsala) : Summary of previous studies, with some relations to BLLAST.

Line Båserud (University of Bergen): Investigating the potential of turbulence measurements with the RPAS SUMO

Guylaine Canut (CNRM-GAME, Météo-France, Toulouse): Back on the high frequency measurements produced by tethered balloon during 12 IOPs of BLLAST

Stephan Wacker (PMOD / WRC) / Jochen Reuder (UiB) : Analysis of the surface energy budget for the BLLAST 2011 campaign

Joan Cuxart (University of Balears) / Jochen Reuder (UiB): Small scale surface temperature heterogeneities: effect on the Surface Energy budget

Daniel Martinez (University of Tübingen) : Monin-Obukhov similarity theory in the 2-m column of thermocouples in the Small-scale heterogeneity site

Pascal Flament (LPCA): An insight on the chemical composition of submicronic aerosols during the 2011 Field Campaign : the Sulfates content

Eric Pardyjak (University of Utah, Salt Lake City): The MATERHORN experiment

Summary reports:

Mariano Sastre Marugan (University Complutense de Madrid):

Summary of activities of Univ. Complutense de Madrid 's group

- "Gravity waves observed during the BLLAST campaign" (Carlos Roman)
- "A comparison between atmospheric boundary layer evening transitions at two experimental sites" (Mariano Sastre)

Anneke van de Boer (University of Wageningen):

Summary of the activities of the Wageningen group

Discussions:

1. Close to the instruments and data process

Updates on Scintillometers, RPAS, Aircraft , Radiosoundings, Ground flux stations, radiation data, aerosol in situ analysis, microbarometer, Tethered balloons

2. Estimates of key variables

Updates on “Z_i”, advection, large scale subsidence

- Z_i estimates that are available on the database were presented to remind the group about the signification of the estimates, and availability of the dataset.

- Suggestion of making available the advection from AROME diagnostics made at the 16 gridpoints around the experimental area.

- Discussion around the TKE estimates, and TKE budgets. A dataset will be built around TKE, with both observation and model data.



Photo: Susanna Mendes

Making a salad all together is very much like how a workshop goes

3. Specific discussions

- Mesoscale Model intercomparison (Pino, Angevine, Bazile, Sastre)

Proposition of considering another golden day (25 June). With soil initialization spin up that Wayne Angevine has used, 2 PBL schemes, same vertical resolution, 10 km x 10 km average for comparison of the free atmosphere first.

- LES intercomparison: mean structure, turbulence spectra and scales (Lohou, Pino, Darbieu, Lothon, Nilsson)

- TKE database, TKE decay (Lohou, Pardyjak, and all)

Proposition of building an internal TKE dataset with all possible measurements, and also estimates from the forecast models and LES. Objective: comparison model/obs and instrumental intercomparison

Review of all instruments that can measure TKE and associated moments and budget term.

Review of what the models can supply

Definition of the information needed in the data files, definition of format

Light on parallel studies that should be done to improve the quality of the estimates, and find new methods relative to the limits reached as regard the usual theoretical frame and hypotheses made

Needed sharing of the methods used for dissipation estimates, corrections for motion for RPAS and TB, criteria for estimating the departure from the theory or assumptions made (for flag definition)

A separated report will be made and sent later for this aspect.

Other topics

- **BLLAST perspectives**

Discussion around the DFG proposal from Frank Beyrich and Jens Bange to make a new experiment in Lindenberg: Lessons from BLLAST have been drawn, and the present groups expressed their interest to participate to the experiment, with a clear preference/availability for 2016. A separated report will be done for this aspect.

- **Data base**

Database: still some data to be supplied for the database to be entirely achieved.

Agreement on opening the database to all.

- **Overview paper and ACP special issue**

Coming soon: Submission of our intention to make a special issue on BLLAST at ACP. Associate editors: Bob Beare accepted. Dave Whiteman and Yves Brunet will be solicited.

- **Upcoming conferences**

- EMS September 2013 (Estel Blay)
- EGU in April 2014 (Turbulence session chaired by C. Yagüe. Invitations to participate)
- BLT in second week of June 2014, Leeds, UK. (several BLLAST participants will participate. Opportunity for a BLLAST meeting.)

- **Fundings**

- NSF proposal submitted in July 2013 by E. Pardyjak.
- ANR funding and CNRS-LEFE funding ongoing.
- Van Gogh proposal submitted in June.
- DFG proposal to be submitted early 2014 for SPALT.
- Berkeley funding supported the work by M. Dumont with I. Faloon in 2013.
- Other fundings to be searched for, in order to support our collaborations (students exchange, meetings, etc...).

- **Next workshop**

- Next meeting will be during the BLT conference in Leeds, UK. This meeting could be planned either on Friday afternoon, or during one night within the conference week.
- Next workshop is proposed for winter 2014/2015, around January or February 2015. Spain is suggested as the hosting country, as D. Pino (Barcelona) and J. Cuxart (Palma) had kindly proposed to host the workshop several times since BLLAST field occurred.



Photo: Susanna Mendes

Thank you Jochen, Line, Jasmin and Susanna...