

DRAFT June 14, 2017

Third meeting of the WWRP PDEF working group
July 3-5, Department of Geography, University of Bern,
Schanzeneckstrasse 1, Room A301, Bern, Switzerland.

PDEF WG attending: Craig Bishop, John Methven, Judith Berner, Susanne Theis, Munehiko Yamaguchi, Oscar Alves, Olivia Rompainen-Martius, Zhiyong Meng, Manuel Fuentes (TIGGE chair), Estelle de Coning (WWRP), Mike Morgan (SSC)

PDEF WG apologies: Mark Rodwell, Paolo Ruti

Meeting guests: Frederic Vitart (S2S co-chair, will give talk remotely), Maxi Böttcher and Hanin Binder (guests from ETH Zurich, NAWDEX/diabatic processes), Christoph Spirig (Meteo Swiss), Dan Rowlands (blending medium-range and extended range ensembles), Martin Weissmann (data denial experiments for NAWDEX period), Luca Della Monache (statistical ensemble post processing, NCAR), Aiko Voigt (convection-permitting resolution climate modelling), Lisa-Ann Quandt (KIT, ensemble sensitivity analysis/multi-model applications to heat waves).

Monday, 3rd July 2017

Coffee: 8:45 – 9:00 am

1. Organisation of the meeting: 9:00-9:05 (CB, JM)

- 1.1. Welcome (CB, JM)
- 1.2. Adoption of the agenda (CB, JM)
- 1.3. Working arrangements (CB, JM)

2. Actions from WWRP SSC (EdC): 9:05-9:25

- 3.1 The WWRP Implementation Plan (EdC) (9:05 – 9:20)
- 3.2 Discussion of PDEF aspects of WWRP Implementation Plan (9:20 – 9:25)

3. Summary of objectives of WG and 5 challenge areas (CB, JM) 9:25-9:30

- Stochastic representation of the effect unresolved processes in numerical models
- Construction of ensemble initial conditions
- Interactions of diabatic processes with weather system dynamics
- Utilisation of multi-model ensembles and post-processing techniques
- Coupled modelling & assimilation

4. Review of activities on coupled modelling and assimilation

- 4.1 Oscar Alves (9:30– 9:55)
- 4.2 Craig Bishop (9:55 – 10:20)
- 4.3 Discussion of ways forward (10:20 – 10:30)

Morning Tea: 10:30 – 11:00

5. Review of activities on interactions of diabatic processes with weather system dynamics

- 5.1 John Methven (11:00 – 11:25)
- 5.2 Maxi Böttcher (studies arising from NAWDEX campaign) (11:25 – 11:50)
- 5.3 Discussion of ways forward (11:50 – 12:00)

Lunch: 12:00-13:30

6. Review of activities on construction of ensemble initial conditions

- 6.1 Craig Bishop (13:30-13:55)
- 6.2 Martin Weissmann (NAWDEX data denial) 13:55 – 14:20
- 6.3 Discussion of ways forward (14:20-14:30)

7. Review of activities on stochastic representation of the effect unresolved processes in numerical models

- 7.1 Judith Berner 14:30-14:55
- 7.2 Aiko Voigt (convection-permitting resolution climate modelling) 14:55-15:20
- 7.3 Discussion of ways forward 15:20-15:30

Tea Break: 15:30 – 16:00

8. Summaries of PDEF related research from WG members that are in attendance

- 16:00-16:30: Zhiyong Meng (20 min talk, 10 min discussion)
- 16:30-17:00: Olivia Rompainen-Martius (20 min talk, 10 min discussion)

9. Idea development session for advancing research on PDEF Foci

17:00-17:30: Led by JM/CB

19:00 – 21:30: Dinner

Tuesday, 4th July 2017

Coffee: 8:30 – 8:45

10. Links with WWRP projects: HiWeather, S2S and PPP

- 10.1. HIWeather project (W2W, Olivia, 8:45 – 9:10)
- 10.2. S2S (Frederic Vitart via telecom, 9:10 - 9:35)
- 10.3. Polar Prediction Project (John Methven, 9:35 – 9:45)

11. TIGGE and TIGGE-LAM

- 11.1 Status report (Manuel Fuentes, 9:45-10:05)

11.2 Review of research that used TIGGE (Munehiko Yamaguchi, 10:05 – 10:30)

11.3 General discussion on TIGGE 10:30-10:40

Morning Tea 10:40 – 11:00

12. Review of activities on utilisation of multi-model ensembles and post-processing (11:00 – 12:00)

12.1 Munehiko Yamaguchi (11:00 – 11:25)

12.2 Susanne Theis (11:25 – 11:50)

12.3 Discussion of ways forward (11:50 – 12:00)

Lunch: 12:00 – 13:00

13. Joint session with Meteo Swiss, University of Bern and invited speakers

Topic: Improving the societal impact of ensemble forecasts

3 warm-up questions posed by Meteo Swiss

- 1) *The vast information through ensemble forecasts: how to provide actionable information to operational weather forecasters*
- 2) *Linking weather with S2S forecasts (dynamical perspective, statistical approaches etc.)*
- 3) *Local scale predictability vs. synoptic scale physical processes (how to deal with large scale biases (e.g in blocking for local scale predictions), how to deal with flow dependent local biases etc.)*

(Invited speakers, 30 minutes presentation plus 15 minutes discussion)

13.1 Introduction to questions and speakers: (13:15 – 13:25, CB/JM)

13.2 Meteo Swiss activities using ensemble forecasts (Christoph Spirig, 13:25 – 14:10)

13.3 Global ensemble forecast utilization/blending for the energy sector (Dan Rowlands, 14:10-14:50)

13.4 High res ensemble post-processing/ severe weather probability forecasts for renewable energy (Luca Della Monache, 14:50 – 15:30)

Afternoon Tea/Coffee 15:30-16:00

13.5 Lisa Quandt (KIT, Multi-model ensemble applications, 16:00 – 16:40)

13.6 Discussion (16:40 – 17:30)

Dinner: 19:00 – 21:30

Wednesday, 5th July 2017

Morning coffee: 8:45 – 9:00

14. Review of minutes from last meeting/action items, etc (9:00-10:30)

Coffee/Tea Break: 10:30 – 11:00

15. Proposals and plans for useful PDEF activities (11:00 – 12:30)

- 15.1 High impact weather workshop on predictability (Landshut, October)
(OM, 11:00 – 11:15)
- 15.2 JM and CHB to lead a discussion on increasing engagement with industrial sectors, 11:15 – 11:30)
- 15.3 Diabatic processes in mid-latitude storm tracks workshop (joint with WCRP Grand Challenge on clouds, circulation and climate sensitivity and SPARC)
(JM, 11:30 – 11:45)
- 15.4 Using Global Cloud Permitting Simulations to Facilitate Improvements in Stochastic Representations of Sub-Grid Scale Processes (CB, JB, 11:45-12:00)
- 15.5 Proposal for a joint WWRP-WGNE-WCRP web site for the intercomparison of multi-model climate ensemble post-processing techniques.
(CB, 12:00 – 12:15)
- 15.6 General discussion (12:15 – 12:30)

Lunch 12:30 – 13:30

16. Any other business and review of meeting outcomes (13:30 – 15:00)

- 16.1. Future activities
- 16.2. Next WG meeting
- 16.3. Review decisions and actions

15:00: WG meeting ends