DISCUSSION

on

possible outcomes of the RDP component of FROST-2014

(with feedback from the participants)

12 April 2013
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<th>R vs. D</th>
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Observations. 1. Topics

- In-situ
- Profilers
- Radars

Anything new in utilizing the observations?

Any new insight for model performance?

Any advice for model designers?

Observability of interesting phenomena, like wind blows, Foehn, ...

2. Suggestions

- George: Need to establish an obs validation site (esp. precip., humidity).
- Paul: Different networks of obs need to be inter-compared (different providers of in-situ obs, profilers, radars).
Deterministic forecasting: 1. Topics

• Resolution
• Nesting
• Physics/Dynamics
• Lateral /upper/lower boundary conditions

• Any new products?

2. Suggestions

• Stephane: A general paper on modelling in FDP&RDP.
• Slobodan: Relationship physics/resolution.
• Stephane: What can be new: visibility, impact of surface (snow), wind gusts, precip: occurrence/type, DA. New products: visibility, wind gusts (if succesful).
• George, Paul: Visibility deserves a special paper (compare forecast/nowcast/obs).
• Paul: Compare 7-km ensemble vs. 2-km deterministic.
• Andrea: A poor-man’s ensemble can be useful.
Ensemble forecasting. 1. Topics

- Ensemble generation techniques (analysis perturbations, model errors...)
- Calibration

Any new products?

2. Suggestions

- John: Calibration can be a subject of a paper.
- Slobodan: A multi-model ensemble.
- Stephane: are the 7-km ensembles capable of producing useful results in complex terrain? Is there any improvement from a super-ensemble?
- Andrea: Site-specific probability products (not maps) can be new.
Nowcasting. 1. Topics

• Extrapolation techniques
• Blending

• Do developers of nowcasting systems anticipate any change in the system’s design in response to their performance in the Sochi area? (Not changing parameters but changing equations?)

2. Suggestions

• Paul: Orographic enhancement is going to be new.
Data Assimilation. 1. Topics

- Techniques (statistics, observational usage, cycling...nudging, variational, ensemble)
- Roles of near-surface, RAOB, satellite, radar data.
- Impact of DA on weather forecasts (situation dependent...).
- Lack of EnKF DA systems in FROST.

2. Suggestions

- Paul: Compare nudging with 3D-Var.
- Michael: Some aspects of the 3D-Var system can be new.
Meteorology (conceptual models, predictability...).

1. Topics

• Winter weather aspects
• Weather in mountains
• Role of the sea
• Precipitation
• Predictability of high-impact weather
• Effects/phenomena: snow blows, Foehn, inversions...

2. Suggestions

• Mostly, relevant issues are to be included in the modelling papers.
• Why a model works or does not work in these conditions?
• George: The list of topics is incomplete.
Verification. 1. Topics

- Techniques (deterministic vs. ensemble fc, pointwise vs. spatial ...)
- Norms, links to end-users

2. Suggestions

- Dmitry: Radar based verification can be subject of a paper.
- George: Compare forecasters’ predictions with model predictions.
Post-processing, interpretation. Topics

- Techniques
- Products
- Impact
- Deterministic/ensemble
Impact assessment. 1. Topics

• Linkage to forecasters
• Linkage to end users
• High-impact weather in the context of Olympics

2. Suggestions

• Pertti: Include sport team managers (not only sport event organisers).
• George: Include/involve venue managers.
• Paul: Interview forecasters and draw conclusions (rather, for a report, not a paper).
• Dmitry: Assess usefulness of forecast products using web based tools.
2. Suggestions

- Andrea: A BAMS paper can be submitted before the Olympics.