

# Discussion for DA sessions

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# Observations

- – OPLACE;
- – Radar, Mode-S data exchange;
- – GPS network in Europe – are GPS complementary to radar data?
- – What obs to assimilation at which time of the day? Or use diurnal B?
- – What obs are needed to fill the spectra?
  - Assimilation of “low-resolution” data- ASCAT?
- Over-fit problem;
  - What are the differences between radar data QC tools (BALTRAD, INCA, etc.) Is there a possibility for cross-comparisons? INCA policy?
- Snow analysis in SODA + Canari;
  - Precipitation analysis?

# VarBC

- Radiance VarBC: cloud contamination problem for low-peaking channels (Benacek (2013), NCEP solution – TOVS Conf.);

ODB

# Background

- Map of sigma-B of the day per network. LAM sigmab maps, other flow-dependent features in AROME-FR (Benjamin Ménétrier);
- Wavelet-space correlation over one and half day;
- REDNMC tuning  $>$  or  $<$  1?  
spin-up ? MF REDNMC 1.2 for 3h-cycling and 0.5 for 1h-cycling; REDNMC=0.5 instead of 1.2 What is the “sampling forecast range?”  
What's the REDNMC for AROME-PI (nowcastig)?
- Spin-up problem with “large jump” in resolution?
- Objective filtering of B? Dependence on the number of ensemble member

# Schemes

- Initialisation – cloud?, Reduced cloud bias by MSG cloud initialization (over one of the periods) → can we similarly reduce bias before applying our BLUE approach (3,4DVAR)
- HARMONIE incremental 4DVAR: problem with fullpos (5km → 2.5 km), a hydrostatic TL/AD model is used (what simplified physics?)
- 4D-ENS-VAR – OOPS ?
- field alignment for radar DA ?
- phase error correction ?
- Bias in in model forecasts prevents assimilation to work well
- Using flake in surface assimilation;
- EKF for soil analysis;
- Can use of both Desroziers et al. (2005) and Holligsworth and Lönnberg (1986) detect problematic observations?