

Status of the short-range Ensemble Prediction System at Météo-France

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COMPAS - CNRM/GMAP/RECYF

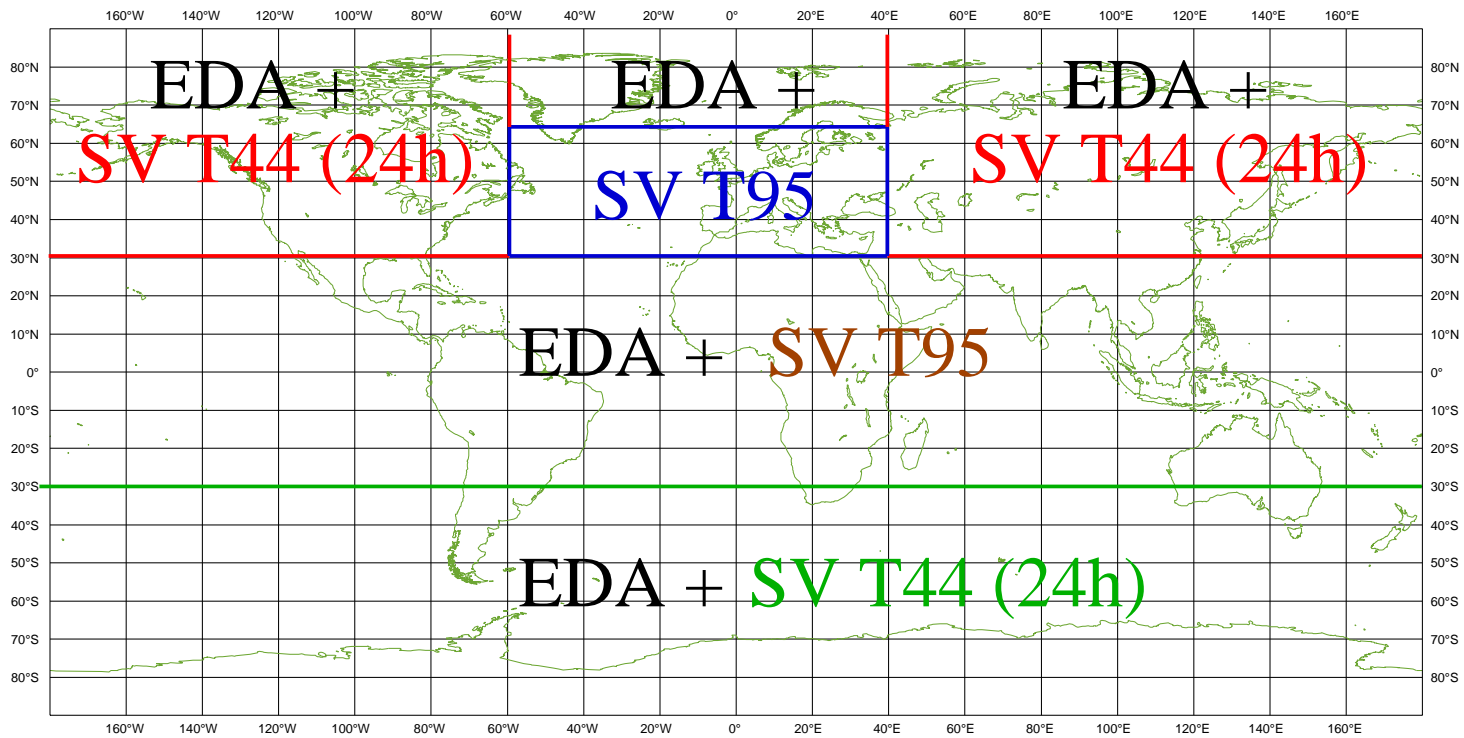
Outline

- Operational configuration of PEARP
 - Initialization procedure
 - Ensemble size
 - Model characteristics
- Some Scores
- Upgrades planned for 2010
- Conclusion

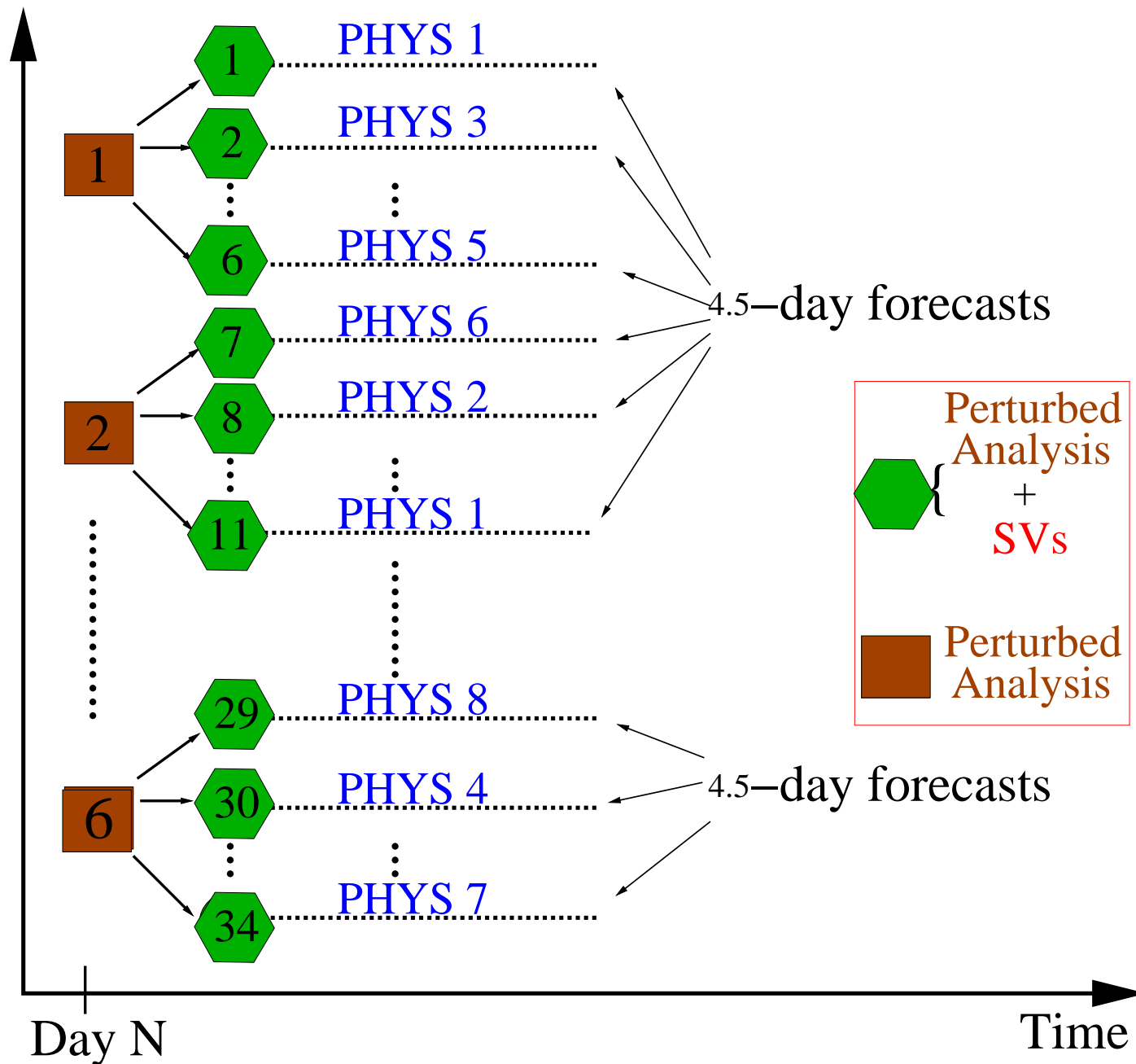
PEARP operational configuration

- **PEARP:Prévision d'Ensemble ARPEGE**
- **Initialization procedure**
 - EDA + 56 dry TE SVs (12h or 24h)
 - Perturbation amplitude controlled by analysis error variance 'of the day'
- **Ensemble size**
 - 34 perturbed members centered around control analysis + 1 control member
- **Model characteristics**
 - 35 4.5-Day forecasts run at T358c2.4 L65 resolution
 - using a set of 8 physical packages
 - Top of the model at 50 km

PEARP operational configuration

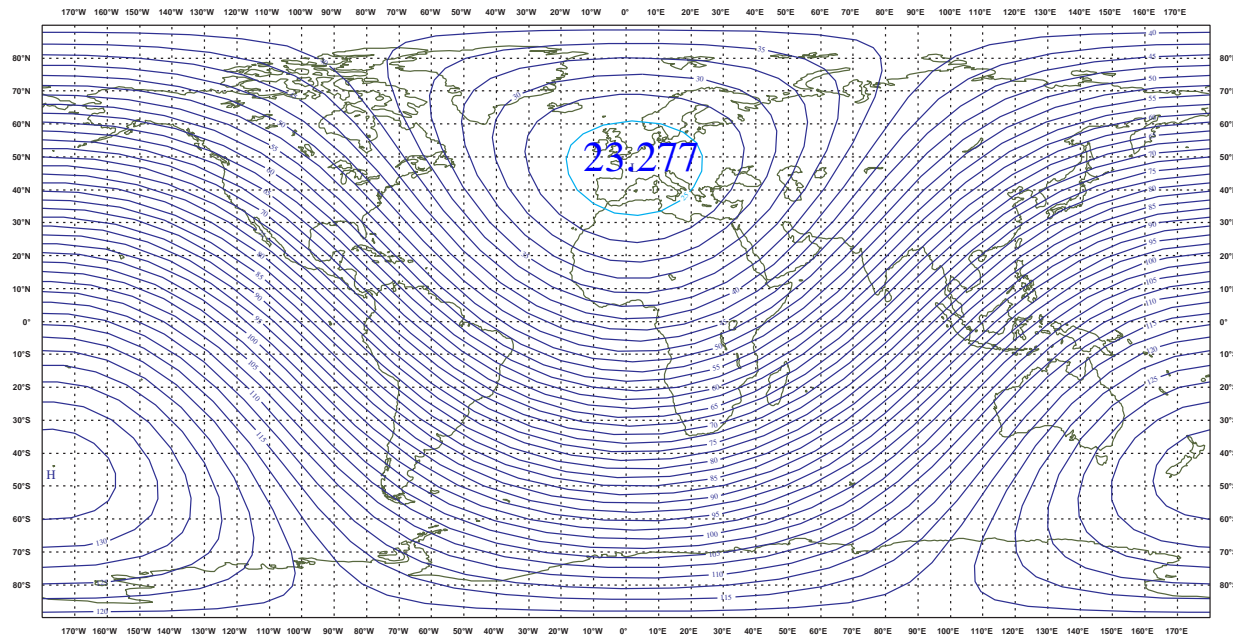


PEARP operational configuration

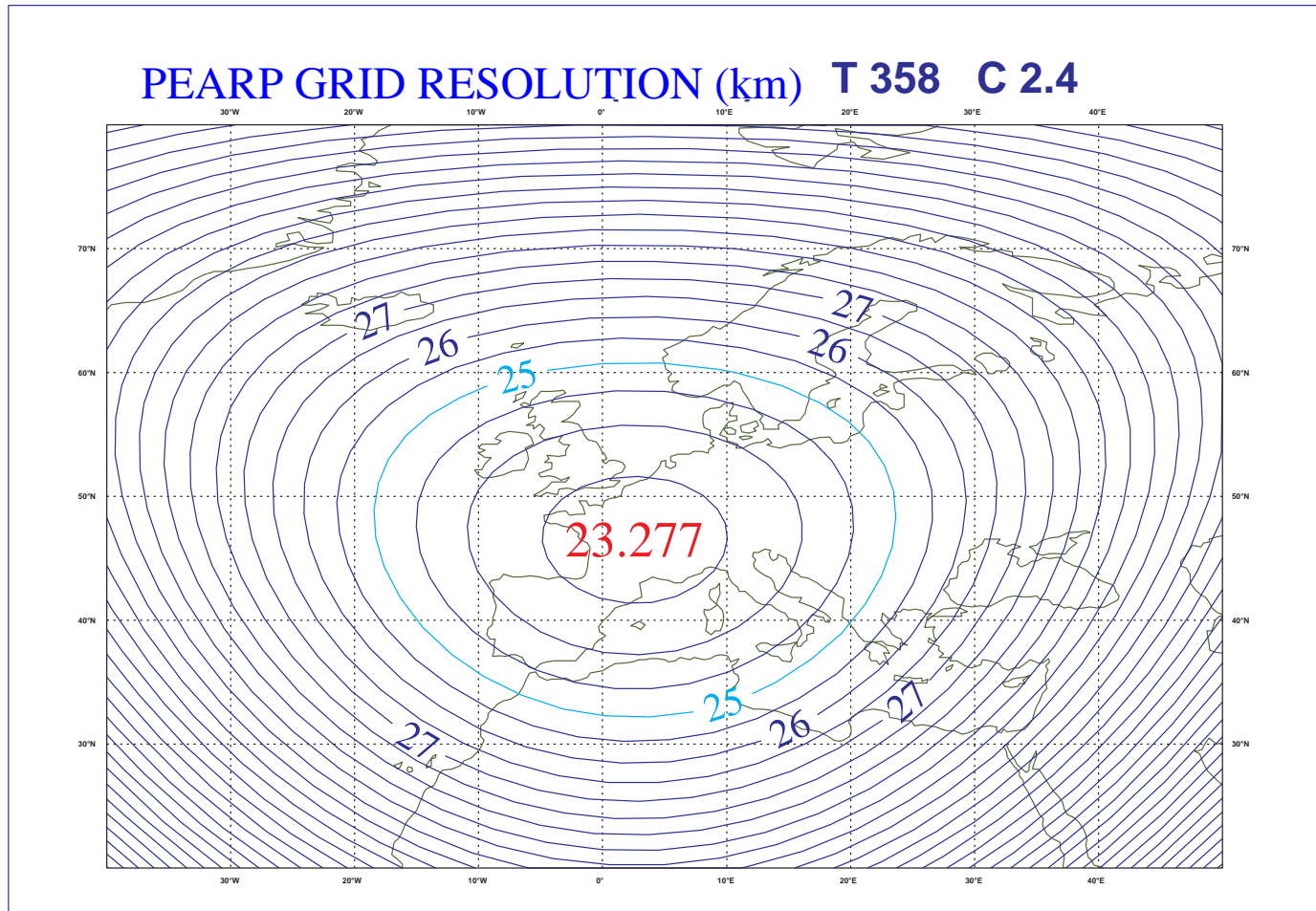


PEARP operational configuration

PEARP GRID RESOLUTION (km) T 358 C 2.4



PEARP operational configuration

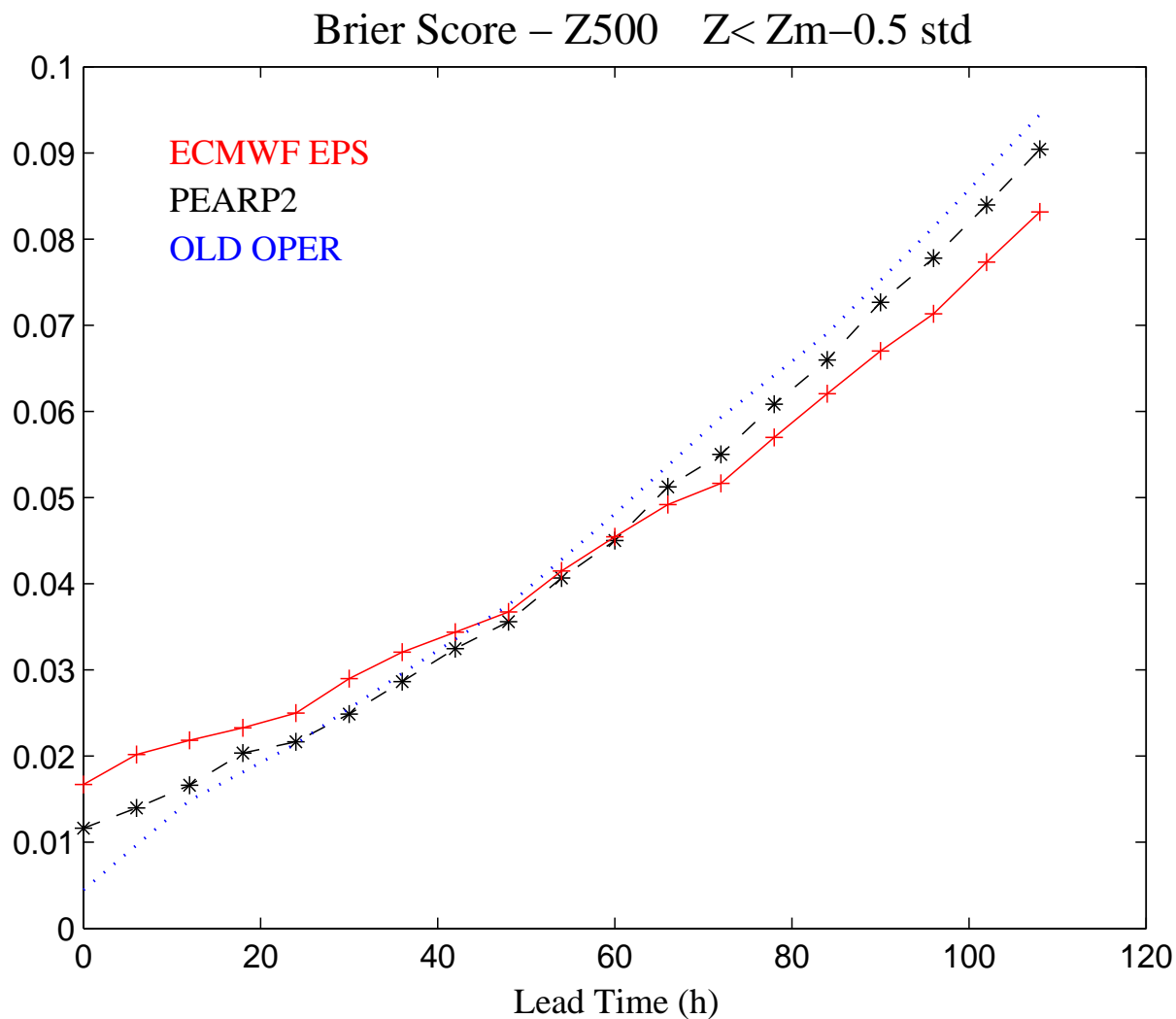


Scores

- Objective evaluation
 - Comparison between PEARP2 (actual OPER) and PEARP1 (old OPER) configurations
 - Comparison between PEARP2 and ECMWF EPS
 - Scores computed over a 60-day period (01/01/09-01/03/09)
 - Scores computed on Northern Hemisphere and EURAT (Western Europe + Atl. Ocean)
 - Use of Talagrand diagram (delta score), Brier score, AROC

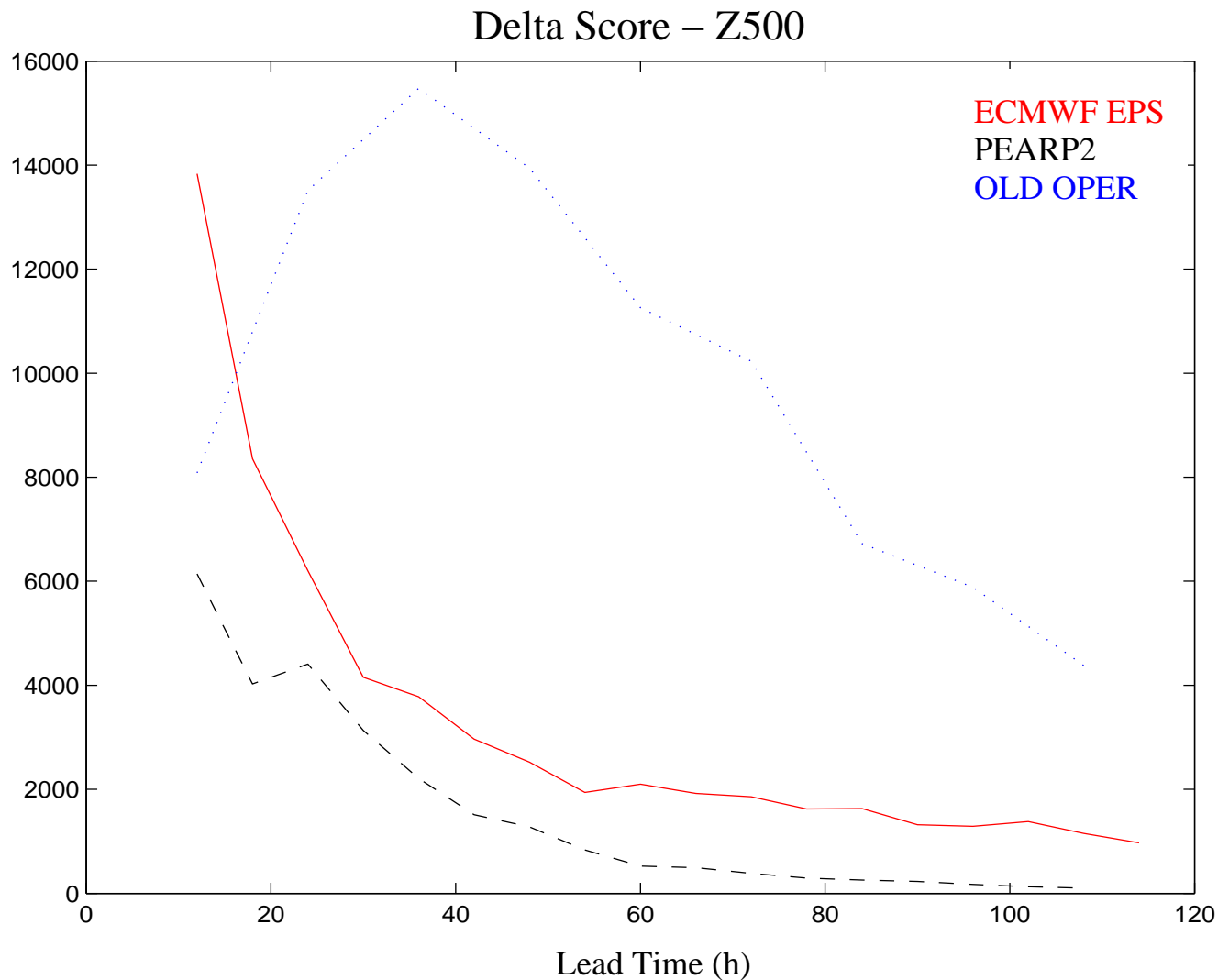
Evaluation over NH

● Brier - Z500



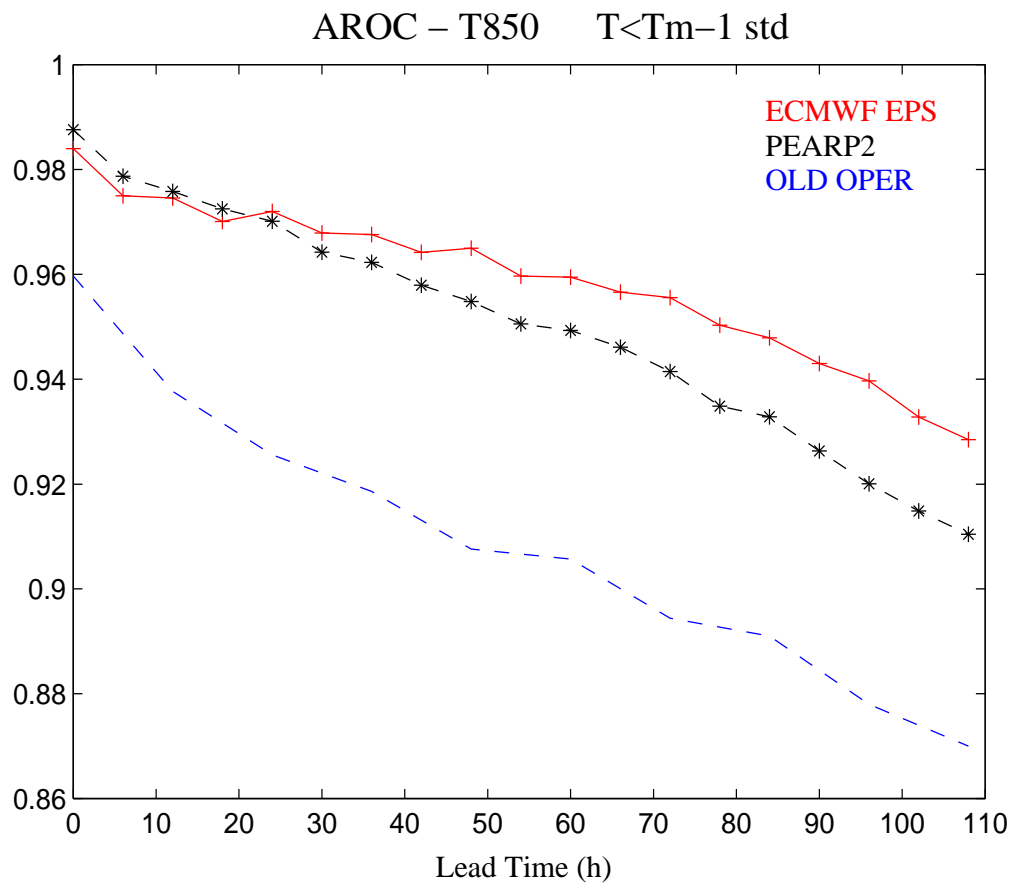
Evaluation over NH

● Delta - Z500



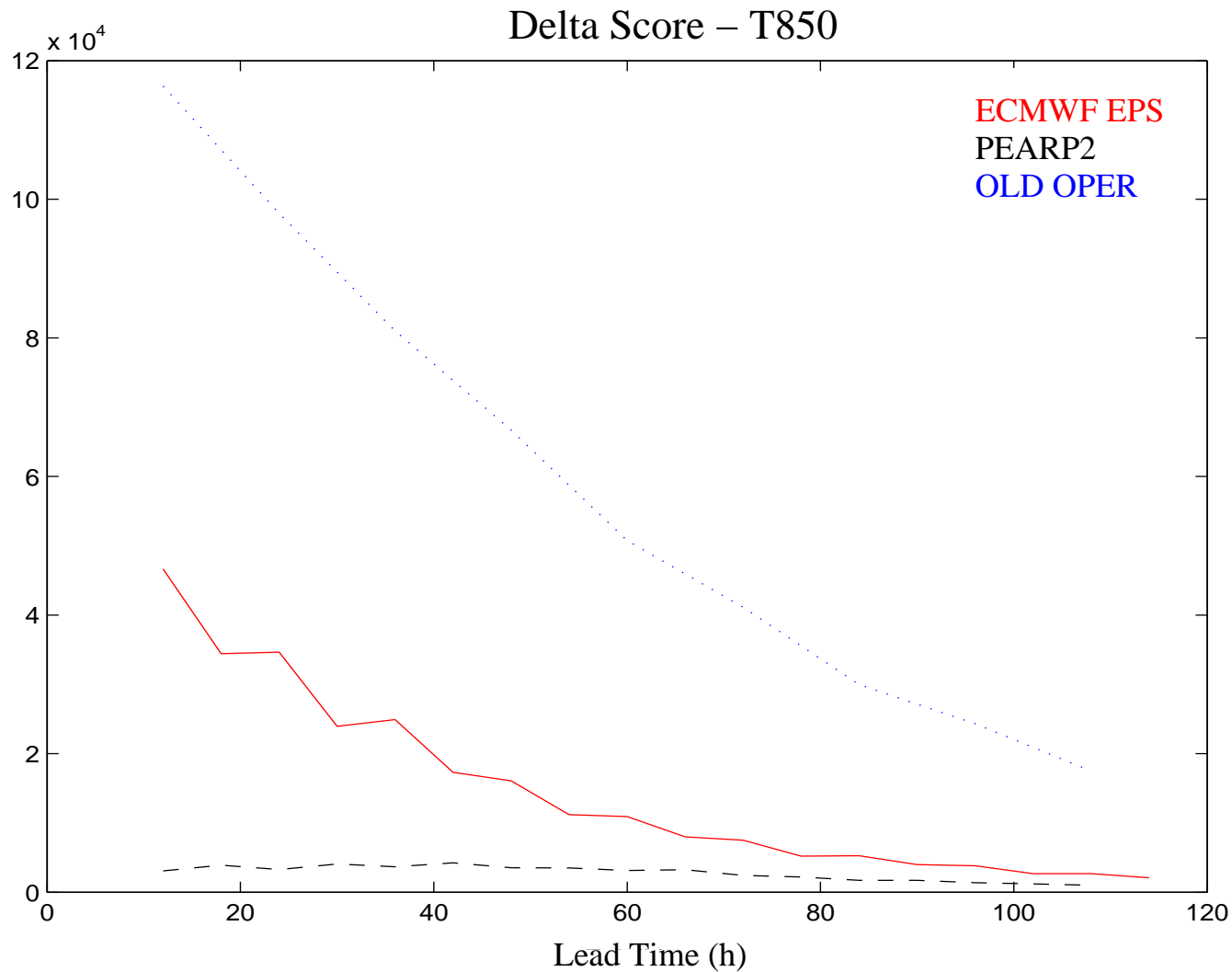
Evaluation over NH

● AROC - T850



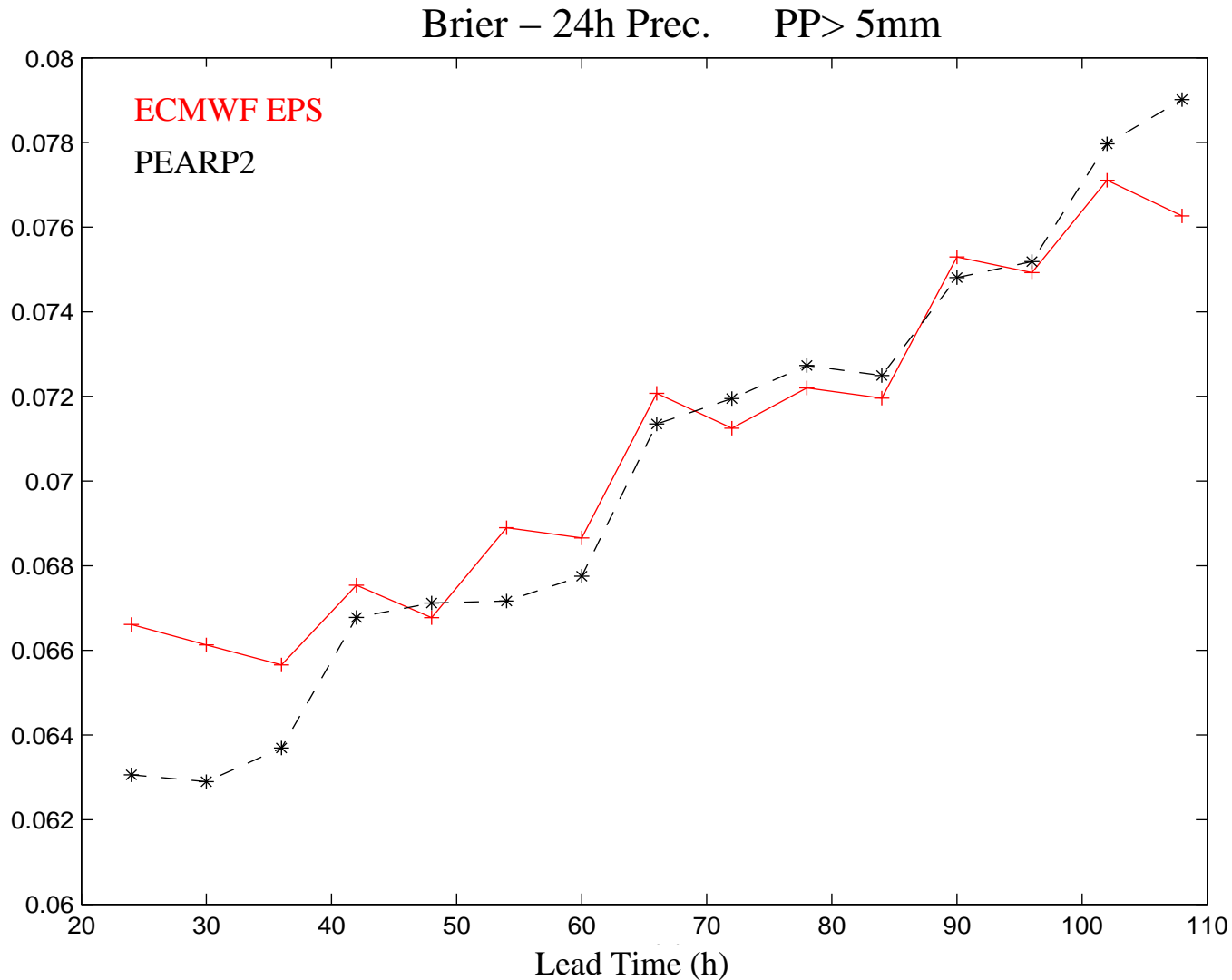
Evaluation over NH

● Delta - T850



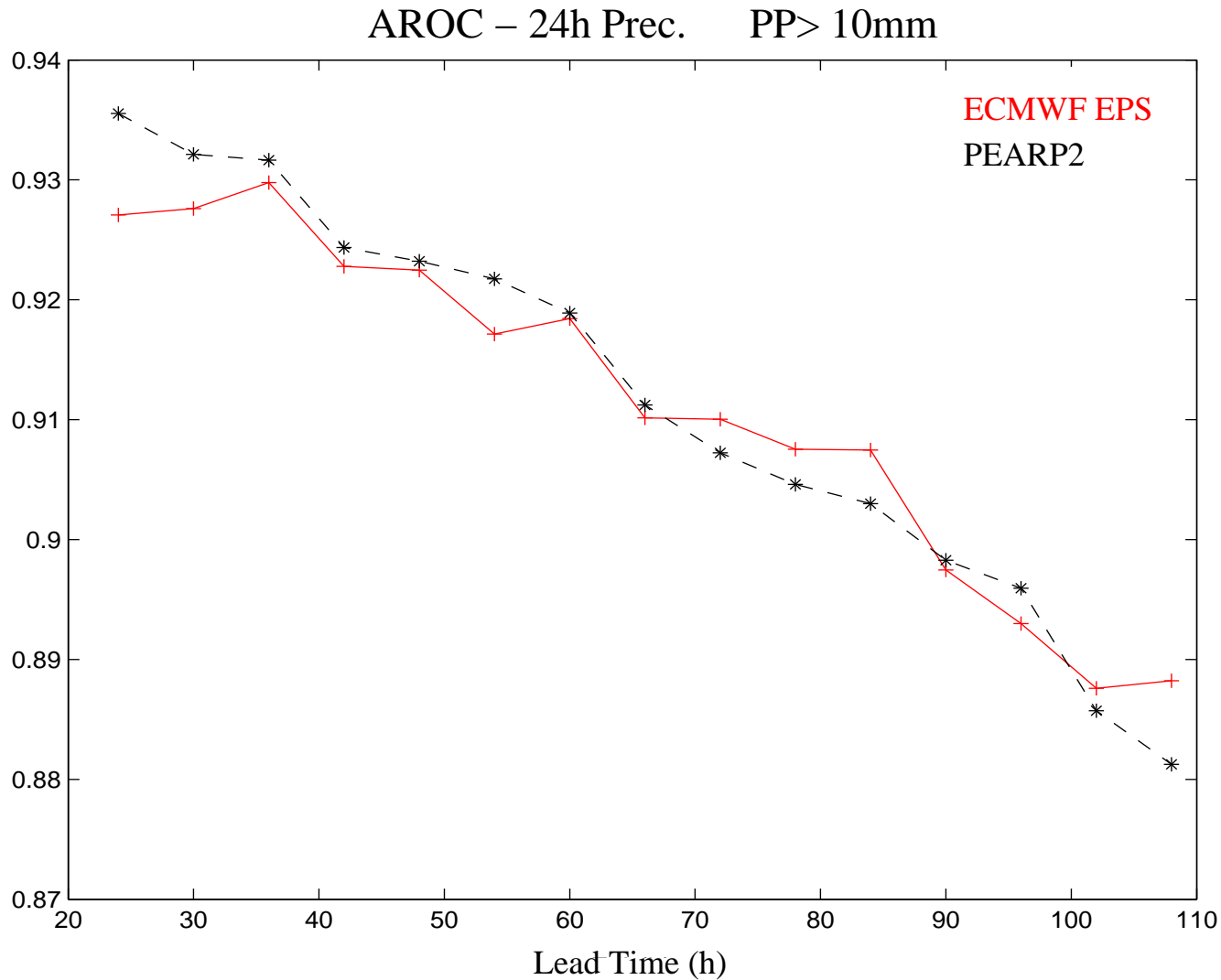
Evaluation over EURAT area - Use of SYNOP

24h - Precip.



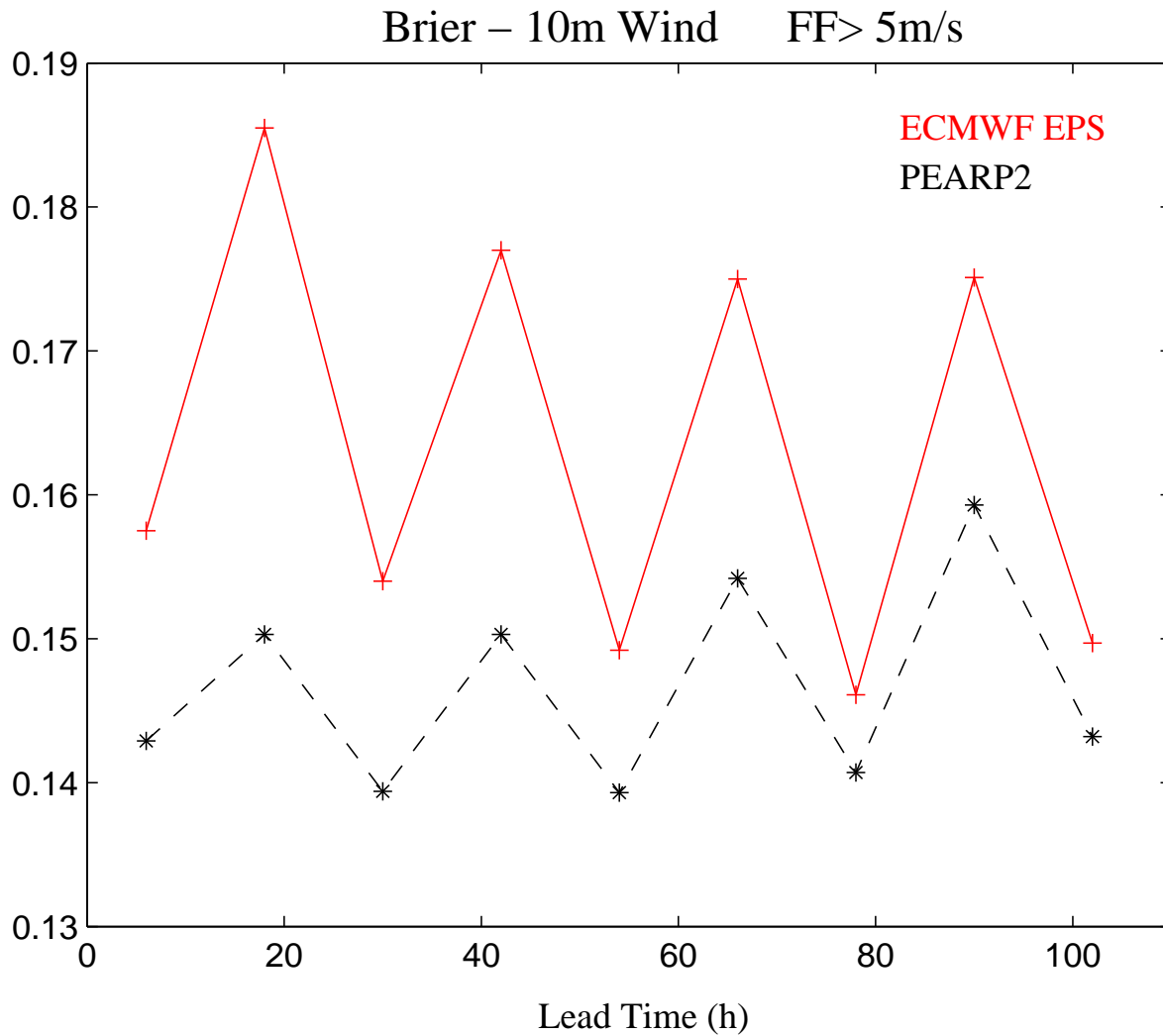
Evaluation over EURAT area - Use of SYNOP

● 24h - Precip.



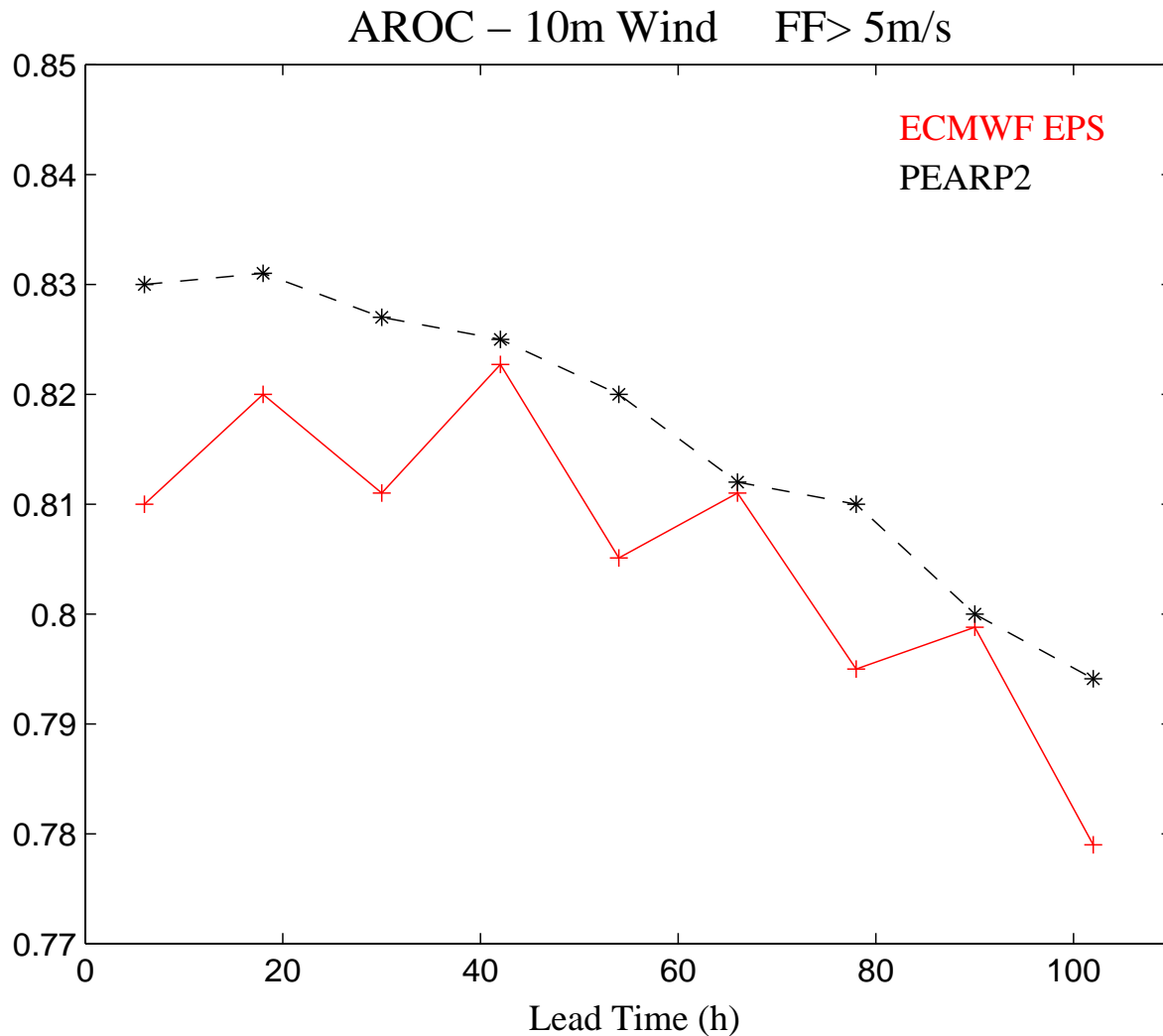
Evaluation over EURAT area - Use of SYNOP

10m Wind



Evaluation over EURAT area - Use of SYNOP

● FF10m Wind



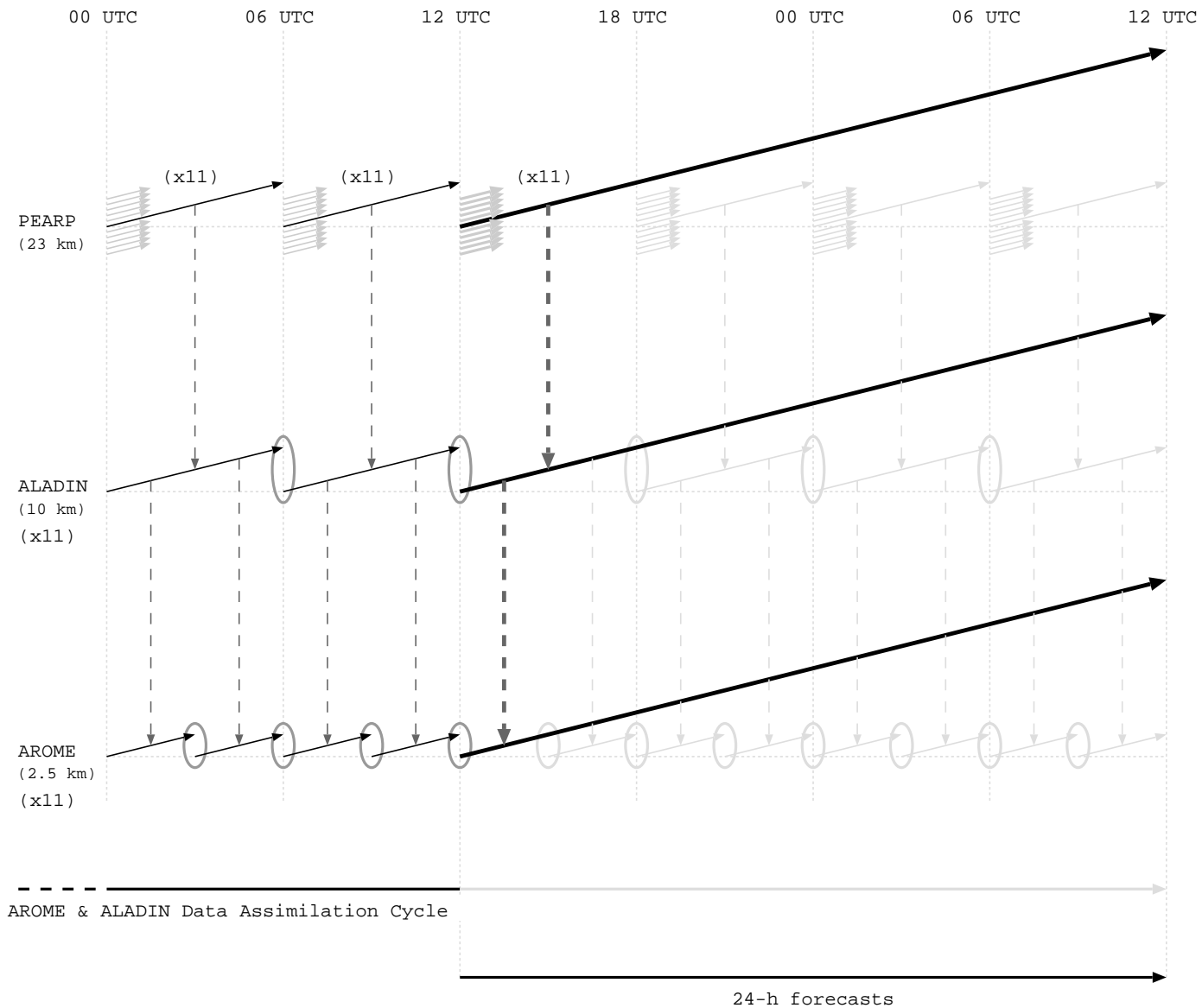
Upgrades planned for 2010

- Initialization procedure
 - Using different targetting areas for tropical SVs
 - Use of 18h or 24h Optimization period for SVs
 - Upgrades of SVs resolution, T95 for all areas ?
- Model resolution
 - Increased model resolution : ~ 10 km over France,
< 20 km over Europe

Conclusion

- PEARP is the EPS of Météo-France
- For short time range, promising scores (close to ECMWF EPS, or even better for 24h-Precip or 10m-Wind)
- An important upgrade of the model resolution is planned for 2010
- PEARP is a GLOBAL EPS with a resolution close to most of European Meso Scale EPS
- Other planned improvement
 - Develop a reforecast data set
 - Use of methods of calibration

Short introduction to AROME EPS



Short introduction to AROME EPS

