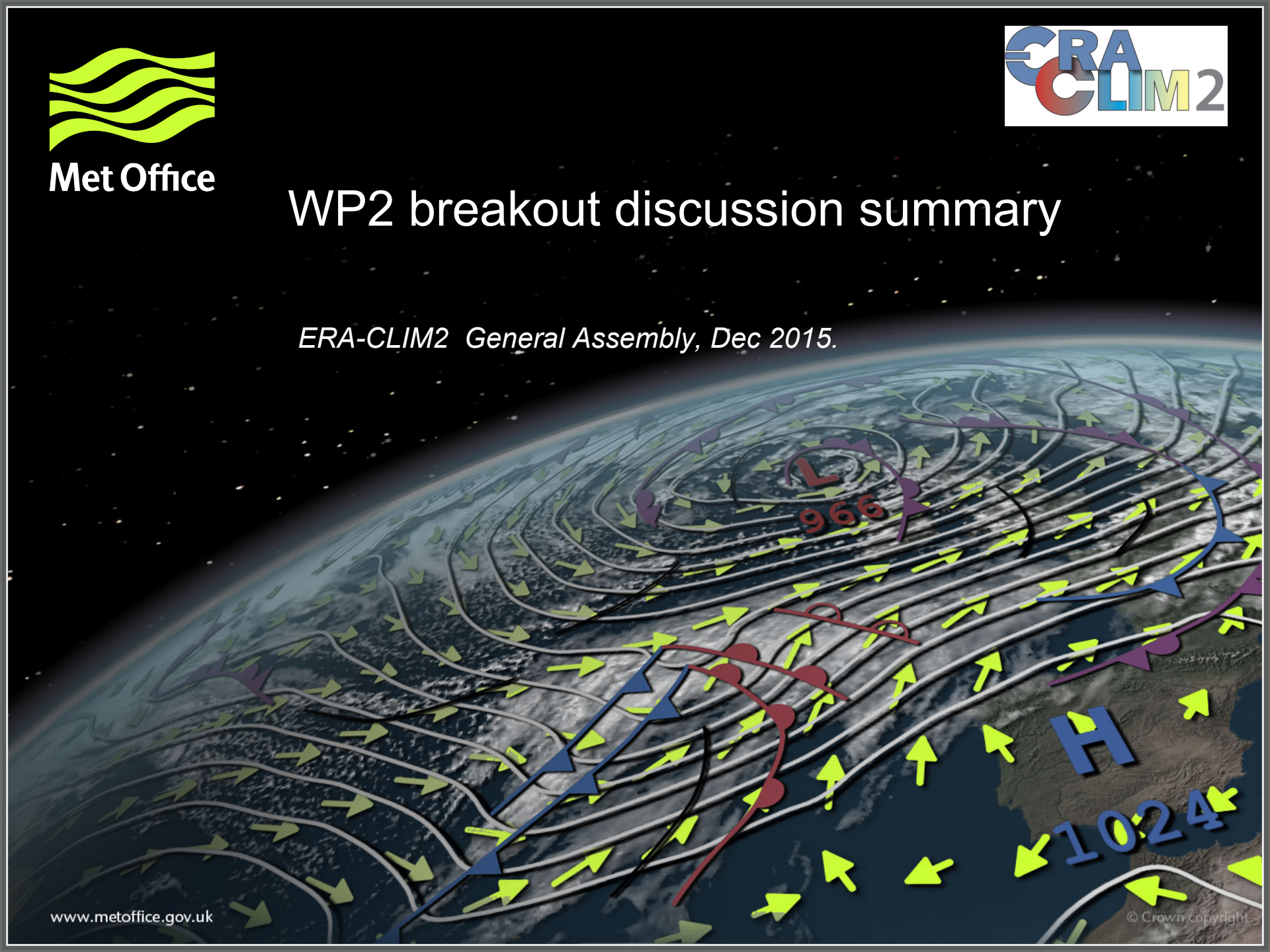
WP2 breakout discussion summary

ERA-CLIM2 General Assembly, Dec 2015.



www.metoffice.gov.uk

© Crown copyright

WP2 discussion topics

- Scientific discussion on selected topics:
  - Estimation of coupled covariances by CERA/ METO/CMCC.
  - ensemble generation CMCC/ECMWF/MERCO
- Code merging/integration updates.
- Future WP2 coordination meeting.
- Potential ERA-CLIM3 work on developments for coupled reanalysis.

© Crown copyright

Coupled error covariances:

• Discussed innovations-based method.

• Results from METO show that, despite strong variable-variable correlations, error-error correlations are small, at least for some variable-pairs such as T2m/SST and wind-speed/SST.

• Would be good for UREAD to calculate similar from CERA system which requires output of SST nudging term from the first outer loop.

Ensemble generation:

•ECMWF, CMCC, MERCO all have implemented various aspects of this.

•Suggest that they be compared/combined.

•Would be useful if the groups use NEMO3.6 so that developments can be shared.

•Need to define a protocol for assessing/comparing different perturbation methods.

© Crown copyright

Plan for next year

Code merging/integration:

• MERCO work on anamorphosis: modular code available next year, and recommendations/ideas for implementation in variational context.

• Continue with NEMOVAR code merging work by METO/ CERFACS/INRIA/ECMWF.

Other development work: LSCE/UVSQ continue to discuss developments/inputs with ECMWF. Other R&D work to continue.

Future WP2 coordination meeting:

• Suggest to have one in ~6 months time.

• Have it in conjunction with another meeting. 2 suggestions:

  - GODAE OceanView joint DA-TT and MEAP-TT workshop in July 2016.
  - WMO workshop on coupled DA. Location/time needs to be determined.

© Crown copyright

Potential future project:

- Focus for the development work will be determined to some extent by the relationship with the Copernicus climate service reanalysis. A more clearly defined relationship with Copernicus would help. For example, would a future project focus on: full 20th Century reanalysis, or a preSat run, or include upper air, ...?
- Most of the existing work in WP2 will need integrating/ implementing in the CERA system.
- Would be useful to have more atmospheric expertise within the development WP.

© Crown copyright

Met Office

www.metoffice.gov.uk

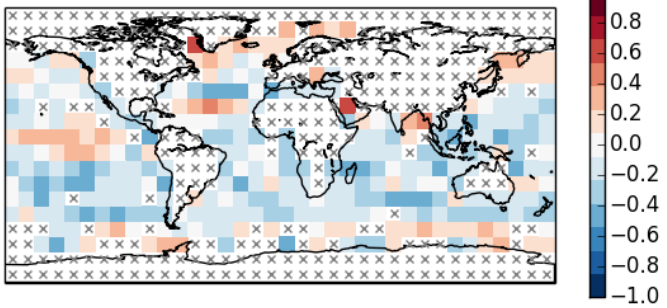
© Crown copyright

Coupled error covariances:

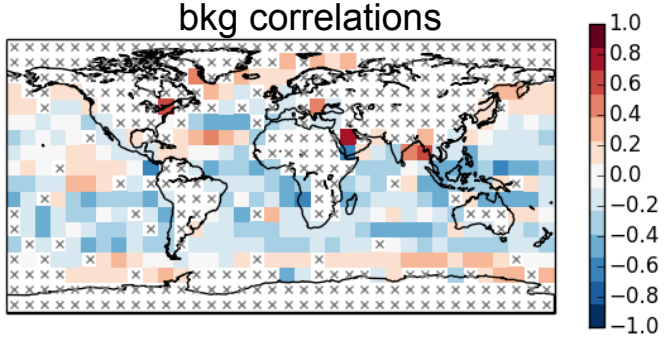
• Discussed innovations-based method. Results from METO show that, despite strong variable-variable correlations, error-error correlations are weak, at least for some variable-pairs such as T2m/SST.

• Would be good to calculate similar from CERA system which requires output of SST nudging term from the first outer loop [Action].

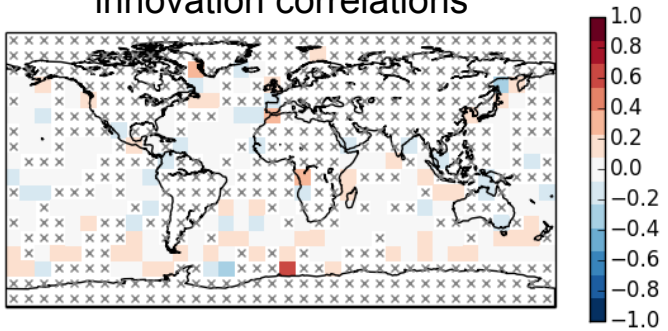
obs correlations



bkg correlations



innovation correlations



Windspeed vs SST for January 2009

pyright