



AOPC/OOPC Surface Pressure Working Group Report

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The presentation covers:

Progress on the 2004/5 Work Plan

Examples of Group activities & publications

2005/6 Work Plan

Progress on the 2004/5 Work Plan

- **Creation of AOPC surface pressure working group web site** <http://www.cdc.noaa.gov/Pressure/> to promote Group activities. *The web site has been completed, evaluated by the Working Group, and put on line: many thanks to Gil Compo and support people at Climate Diagnostics Center (Univ. Colorado and NOAA)*
- **Formulation of format for data archive** . *Still to be decided on as part of the development of the International Pressure Data Bank. Over-complexity undesirable.*
- **Examination of the U.K's "Superfile" daily pressure gridded product to check its veracity.** *Tara Ansell has begun this task in relation to the creation of the daily historical EMSLP3 data set for the European-Atlantic sector 1850-2003 within the EC-funded EMULATE project.*
- **Fully describe ongoing issues, including duplicate marine observations, the low pressure bias in the Maury data, and grid-box uncertainties.** *These issues have been examined by Tara Ansell as part of the EMSLP3 and HadSLP2 data set construction (see later slide). Papers detailing EMSLP3 and HadSLP2 from 1850-2003 are in progress.*

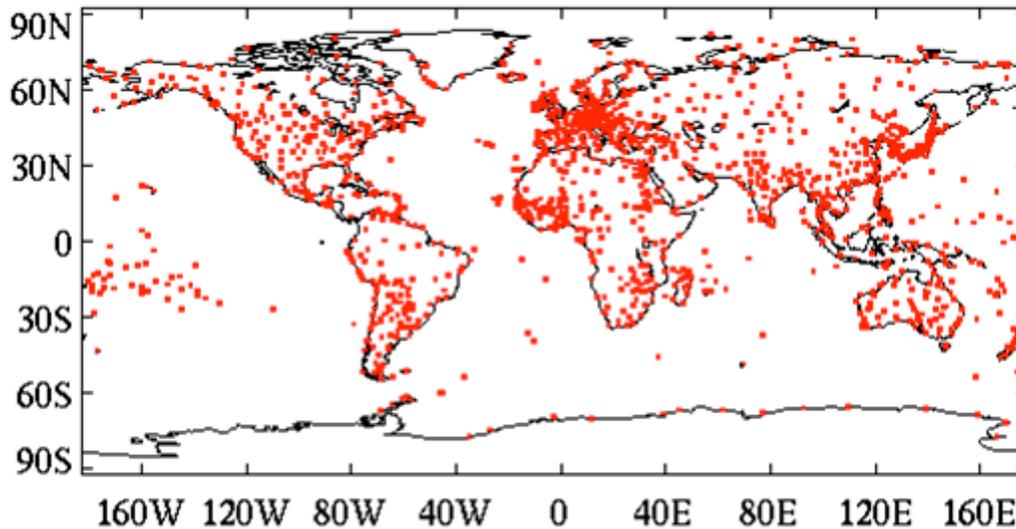
Progress on the 2004/5 Work Plan (continued)

- **Development of real-time capability for HadSLP data set** *This has been completed by Tara Ansell as an interim product, HadSLPr, using adjusted NCEP/NCAR reanalysis data from 2004. A more detailed approach to developing the real-time capacity without NCEP/NCAR reanalysis data may be developed.*
- **Expansion to include collation and analyses of wind data** *This is an ongoing issue which will be discussed at the next Working Group Meeting. Current proposal is to approach Dr Shawn Smith, COAPS, Florida State University to join the Group as a marine wind expert.*
- **Development of efforts to undertake 100 year reanalysis using only surface data** *Gil Compo has some support from NOAA to initiate this: http://www.joss.ucar.edu/joss_psg/meetings/climatesystem/WG_Report.pdf. Work is underway to retrieve the data necessary to undertake this project.*
- **3rd AOPC/OOPC Surface Pressure Working Group Meeting** *Will take place at the Met Office, Exeter, UK on Friday 21st October 2005. Details can be found at the following URL: <http://www.cdc.noaa.gov/Pressure/Workshops/upcoming.html>*



Examples of Group activities & Publications

New MSLP gridded products

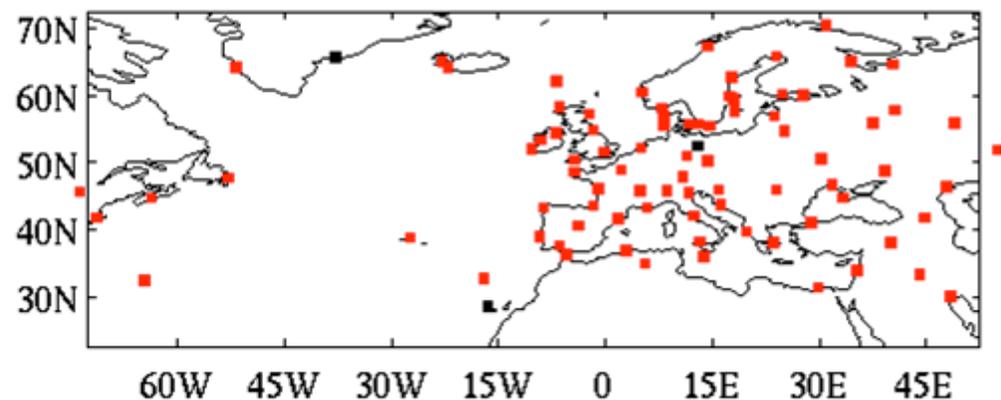


HadSLP2 :

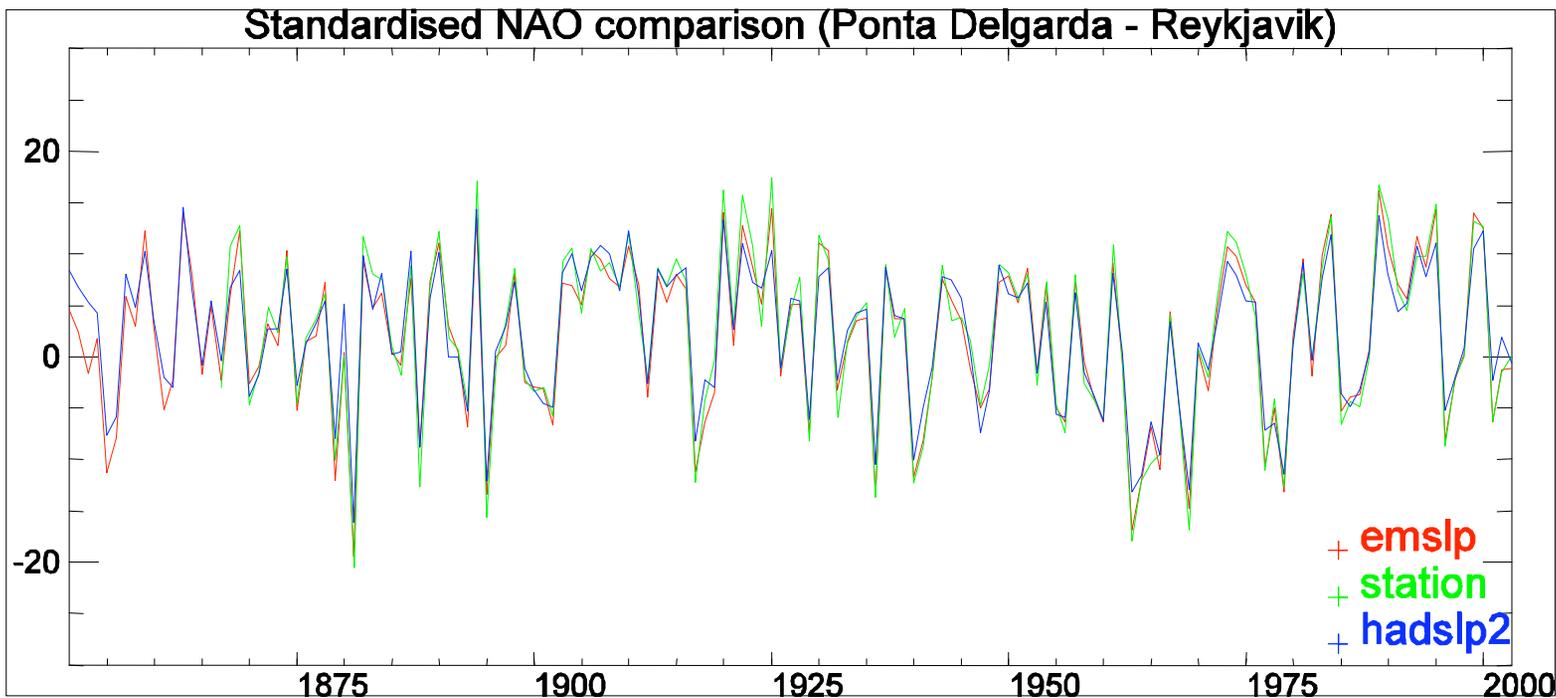
- Global, **monthly** product (update of **HadSLP1**)
- Blend of **1502** stations + marine obs from **1850-2003**
- 5x5 degree resolution
- will be **updated** in near real time & available from **www.hadobs.org**
- **HadSLP3** will be created by the end of 2005

EMSLP3:

- North Atlantic – Europe **daily** product
- Blend of **86** stations + marine obs from **1850-2003**
- 5x5 degree resolution
- available Nov, 2005 from : **www.cru.uea.ac.uk/emulate**



Comparison of the North Atlantic Oscillation (NAO) Index from station, EMSLP3 and HadSLP2 data

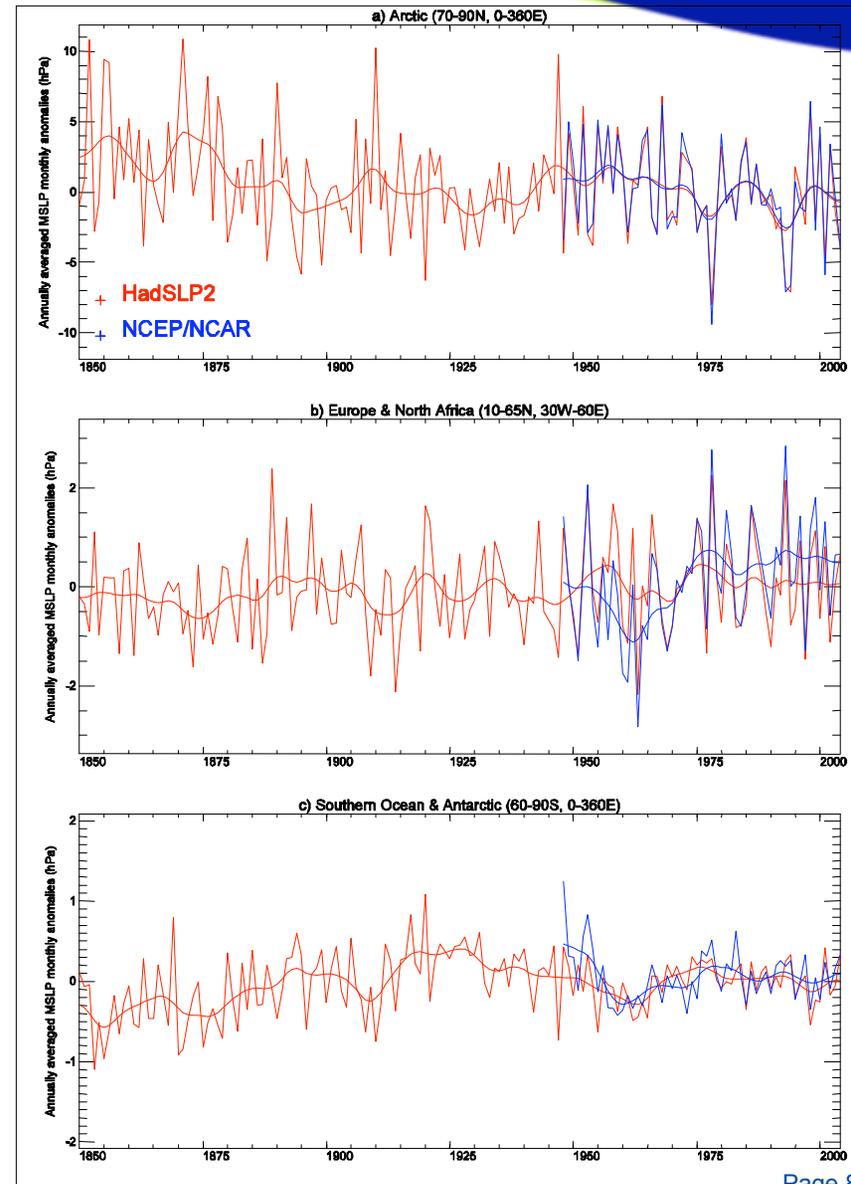


The winter (December to February) North Atlantic Oscillation from 1850-2003 from EMSLP (red), and HadSLP2 (blue) gridded products. The winter NAO is calculated by taking the difference between the grid point closest to Ponta Delgada (Azores) and that closest to Reykjavik (Iceland). The 1961-1990 mean series value is then removed from each value. Also plotted is a station based index (green), using data from Reykjavik and Ponta Delgada (denoted here 'station'); units are in hPa

HadSLPr and NCEP/NCAR evaluations in real time development



Annual averaged MSLP anomalies, 1850-2004, for HadSLP2r (red) and for NCEP/NCAR 1948-2004 (blue) for a) Arctic, b) Europe and Northern Africa and c) Southern Ocean and Antarctic. The NCEP/NCAR anomalies are based on unadjusted data, but are relative to the NCEP/NCAR 1961-90 climatology, so are unbiased relative to the HadSLP2r anomalies. Each series has been smoothed with a 21-term binomial filter and over-plotted to show decadal and longer-term variations.



Relevant Publications 2004-2005

Allan, R. J. and Ansell, T. J., 2005: A new globally complete monthly historical gridded mean sea level pressure data set (HadSLP2): 1850-2003. *J. Climate* (In preparation).

Ansell, T. J. *et al.*, 2005: Daily mean sea level pressure reconstructions for the European North Atlantic region for the period 1850-2003. *J. Climate* (In preparation).

Bronnimann, S., Compo, G.P., Sardeshmukh, P.D., Jenne, R. and Sterin, A., 2005: New approach for extending the Twentieth Century climate record. *Eos*, **86**,1,2-6.

Kanamitsu, M. and Hwang, S.-O., 2005: The role of sea surface temperature in reanalysis. *Mon. Wea. Rev.* (Submitted).

Whitaker, J.S., Compo, G.P., Wei, X. and Hamill, T.M., 2004: Reanalysis without radiosondes using ensemble data assimilation. *Mon. Wea. Rev.*, **132**, 1190-1200.

2005 Work Plan

- **Co-opt Tara Ansell & Shawn Smith into the Core Membership of the Working Group**
- **Continue development of Working Group WWW site**
- **Complete HadSLP3 data set**
- **Establish International Pressure Data Bank (holding both pressure station time series & gridded products on sub-daily, daily & monthly timescales) in the most appropriate data format**
- **Obtain sub-daily to daily pressure data for both 100 year reanalysis & development of historical Northern Hemisphere gridded data set building on EMSLP3, ICOADS, & ISH compilations**
- **Possible analysis of storminess using rapid sub-daily pressure changes**
- **Conduct the 3rd AOPC/OOPC Surface Pressure Working**