Discussion – S2S Database / R2O

Frédéric Vitart and Andrew Robertson♪

- Daily 3-week behind real-time forecasts + re-forecasts up to day 60

- 11 models currently available

- Same grid (1.5 degree) / format (GRIB2)

- More than 80 variables available

World
Meteorological
Organization

S2S partners

	Time-range	Resol.	Ens. Size	Freq.	Hcsts	Hcst length	Hcst Freq	Hcst Size
ECMWF	D 0-46	Tco639/319L91	51	2/week	On the fly	Past 20y	2/weekly	11
UKMO	D 0-60	N216L85	4	daily	On the fly	1993-2015	4/month	7
NCEP	D 0-44	N126L64	4	4/daily	Fix	1999-2010	4/daily	1
ECCC	D 0-32	0.6x0.6L40	21	weekly	On the fly	1995-2014	weekly	4
BoM	D 0-60	T47L17	33	weekly	Fix	1981-2013	6/month	33
JMA	D 0-33	Tl479/Tl319L100	50	weekly	Fix	1981-2010	3/month	5
KMA	D 0-60	N216L85	4	daily	On the fly	1996-2009	4/month	3
CMA	D 0-45	T106L40	4	daily	Fix	1886-2014	daily	4
CNRM	D 0-32	T255L91	51	Weekly	Fix	1993-2014	4/monthly	15
CNR-ISAC	D 0-32	0.75x0.56 L54	40	weekly	Fix	1981-2010	6/month	5
HMCR	D 0-63	1.1x1.4 L28	20	weekly	Fix	1981-2010	weekly	10

S2S parameters

- Pressure level parameters: gh/u/v/t/specific humidity/vertical velocity at 1000/925/850/700/500/300/200/100/50/10 hPa

- Surface parameters: SST/sea ice cover/MSLP/2t/2d/soil moisture/ soil temperature/fluxes/total cloud cover/total cloud water/cape/precipitation/ snow cover/snow albedo/10m u and v/surface and skin temperature/runoff/ orography/Land sea mask/soil type.

Indices from all S2S real-time and re-forecasts publicly available in ftp sit
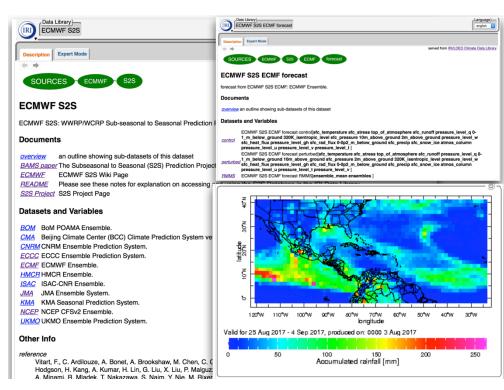e ftp://acquisition.ecmwf.int/♪
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- ## MJO index

- ## Tropical cyclone tracks (now available!)

There are plans to add other indices (e.g. SSW, weather regimes..)

- Over 2/3 of the S2S database is archived at IRI, including MJO indices

- Kept up to date

- Allows server-side and "lazy" computa- tion to analyze the data according to user requests (eg weekly averaged an omalies of ensemble means, EOFs …)

- Good for low-bandwidth situations

- OpenDAP

- Python interface for forecast calibration using CCA (A. Munoz, talk A3-03)

- Planned maproom development to visu alize weekly anomalies

S2S Database enhancement

- Continue to maintain and update the current S2S database with current model upgrades and new models, possibly new variables.

- Add the originally-planned ocean variables to the S2S database in NetCDF format.

- Make model ensemble means, model climatology available from the IRI data library to save time and efforts to a large range of users.

- Create a verification and products interactive maprooms using IRI Data Library

- Consider increasing time frequency of some surface parameters (6-hourly instead of daily) – e.g. 10m wind

List of Ocean parameters

- Sea surface salinity ♪
    ♪♪
- Depth of the 20 deg isoth♪
    ♪♪
- Heat content to 300m♪
    ♪   ♪♪
- Salinity in top 300m♪
    ♪♪
- U surface current   ♪♪
♪
- V surface current♪
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- Sea surface Height   ♪♪
    ♪♪
- Mixed-layer depth♪
♪
- Sea ice thickness   ♪♪

ECMWF

EUROPEAN CENTRE FOR MEDIUM-RANGE WEATHER FORECASTS♪

Research to Operations (R2O)

- *Pursue research for testing and developing methodologies for calibration, combination, verification and generation of forecast products*

- *Coordination with the relevant WMO technical commissions to define the standards and protocols for operational implementation and exchange of S2S forecasts*