The S2S Museum
- a website of ensemble forecast products -

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S2S Museum (google "S2S Museum")

NAO index forecasts

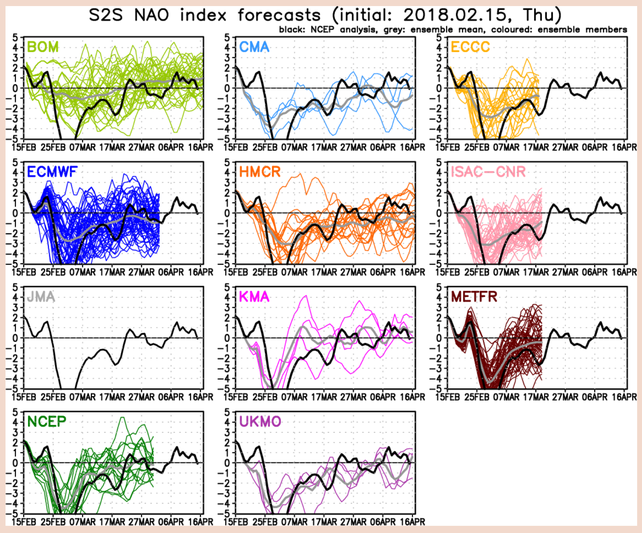


Figure 1: *NAO index forecasts by BoM (yellow-green), CMA (aqua), ECCC (yellow), ECMWF (blue), HMCR (orange), ISAC- CNR (light pink), KMA (pink), METFR (brown), NCEP (green) and UKMO (purple), initialised on 15 February 2018. The coloured and grey lines indicate individual ensemble members and ensemble mean, respectively. The black line corresponds to the NCEP control analysis.*

SSW forecasts

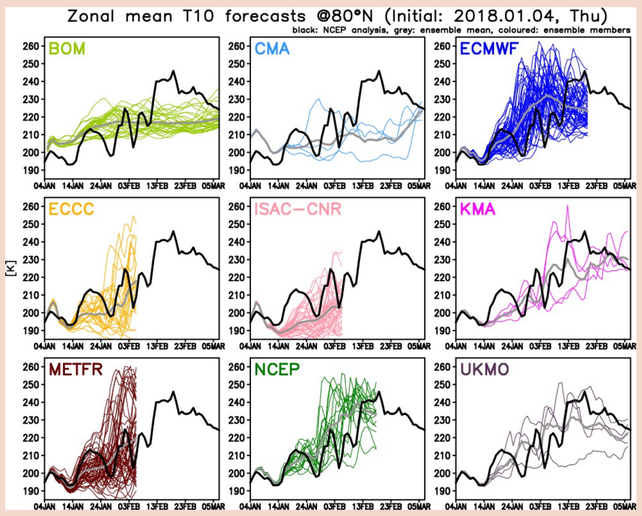


Figure 2: *Zonal mean temperature at 10 hPa over 80°N line forecasts by BoM (yellow-green), CMA (aqua), ECMWF (blue), ECCC (yellow), ISAC-CNR (light pink), KMA (pink), METFR (brown), NCEP (green) and UKMO (purple), initialised on 4 January 2018. The coloured and grey lines indicate individual ensemble members and ensemble mean, respectively. The black line corresponds to the NCEP control analysis.*

200 hPa velocity potential forecasts

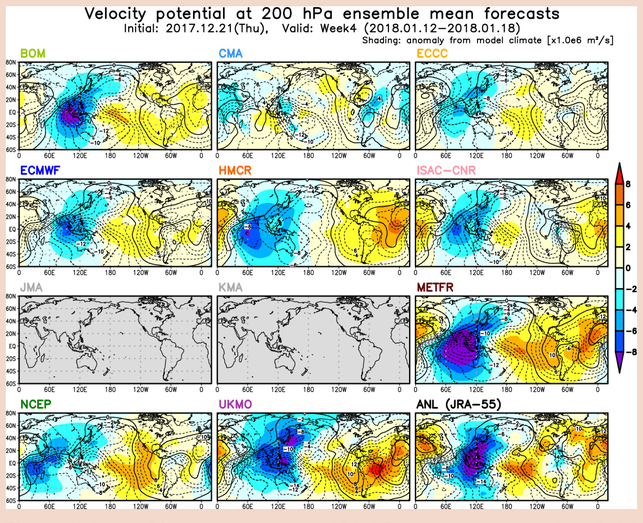
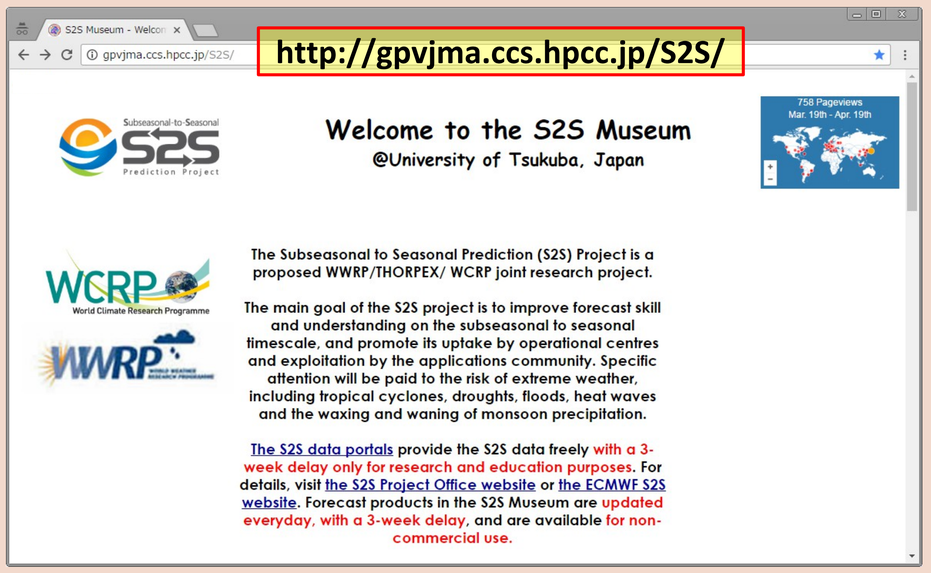


Figure 3: *Ensemble mean forecasts of 200hPa velocity potential by BoM (yellow-green), CMA (aqua), ECMWF (blue), HMCR (orange), ISAC-CNR (light pink), METFR (brown), NCEP (green), and UKMO (purple), initialised on 21 December 2017, valid on 12 – 18 January 2018 (Week 4). Observed 200hPa velocity potential (JRA55, bottom right) is also added when it becomes available. The contour and shading indicate full and anomaly fields, respectively.*

Entrance (top page)



List of forecast products

- Arctic/Antarctic Oscillations (AO/AAO) index
- **North Atlantic Oscillation (NAO) index (Fig. 1)**
- Teleconnection (EA, PNA, WA, WP & EU) indices
- SLP & Z500 anomalies (stamp maps)
- **Sudden Stratospheric Warming (SSW, Fig. 2)**
- Temperature at 10 hPa
- **Stream function and velocity potential at 200&850hPa (Fig. 3)**
- Wave Activity Flux at 200 hPa
- **Madden-Julian Oscillation (MJO, Fig. 4)**
- Precipitation
- **Sea Surface Temperature (SST, Fig. 5)**
- **Sea-ice cover (Fig. 6)**

Data detail of the S2S data (as of November 2017)

	Real time					Reforecast				
	forecast length	model resolution	ens. size	forecast freq.	data available period	system (model ver.)	ens. size	reforecast frequency	reforecast period	orig data grid
BoM (Australia)	D1 – 62 (00UTC)	T47L17	33	Sun Thu	2015.01.01 -	fixed (2014.01.01)	33	1st, 6th, 11th, 16th, 21st, 26th of each month	1981 - 2013	T47 (144x72)
CMA (China)	D0 – 60 (00UTC)	T106L40	4	daily	2015.01.01 -	fixed (2014.05.01)	4	daily	1994 - 2014	1.5x1.5
ECCC (Canada)	D1 – 32 (00UTC)	0.45° x 0.45° L40 (uncoupled)	21	Thu	2016.01.07 -	on the fly	4	Thu	1995 - 2014	1.5x1.5
ECMWF (Europe)	A: D0 – 32 B: D0 – 46 (00UTC)	Tco639L91(<D10) Tco319L91(>D10)	51	Mon Thu	2015.01.01 -	on the fly A: –2017.05.11 B: 2017.05.14–	A: 5 B: 11	A: Thu B: Mon, Thu	past 20yrs (e.g. 1997-2016)	1.5x1.5
HMCR (Russia)	D0 – 61 (00UTC)	1.125° x 1.40625° L28 (uncoupled)	20	A: Wed B: Thu	A: 2015.01.07 - 2017.5.31 B: 2017.06.08 -	on the fly A: 2015.01.07- 2017.05.31 B: 2017.06.08-	10	A: Wed B: Thu	1985 - 2010	1.5x1.5
ISAC-CNR (Italy)	D0 – 31 (00UTC)	0.75° x 0.56° L54 (a 'slab' ocean)	41	A. Mon B. Thu	A. 2015.11.09 - 2017.01.16 B. 2017.01.19 -	fixed A: 2015.03.26 B: 2017.06.08	A: 1 B: 5	every 5 days	A: 1981 - 2010 B: 1981 - 2010	1.5x1.5
JMA (Japan)	A: D0.5 – 33.5 B: D0.5 - 32.5 (12UTC)	TL319L60 (uncoupled)	A: 25 B: 50	A: Tue&Wed B: Wed*	A: 2015.01.06 - 2017.03.15 B: 2017.03.22 -	fixed A: 2014.03.04 B: 2017.01.31	5	10th, 20th, the last date of each month	A: 1981 - 2010 B: 1981 - 2012	1.5x1.5
KMA (Korea)	D0 – 60 (00UTC)	N216 (0.83° x 0.56°) L85	4	daily	2016.11.01 -	on the fly	3	1st, 9th, 17th, 25th of each month	1991 - 2010	1.5x1.5
Met. France (France)	A. D0 – 61 B. D0 – 32 (00UTC)	TL255L91	51	A. monthly (1st) B. Thu	A. 2015.05.01 - 2016.02.01 B. 2016.03.03 -	fixed (2014.12.01)	15	1st and 15th of each month	1993 - 2014	1.5x1.5
NCEP (US)	D0 – 44 (00UTC)	T126L64	16	daily	2015.01.01-	fixed (2011.03.01)	4	daily	1999 - 2010	1.5x1.5
UKMO (UK)	D0 – 60 (00UTC)	N216 (0.83° x 0.56°) L85	4	daily	2015.12.01 -	on the fly A: 2016.01.01- 2016.04.09 B: 2016.04.17- C: 2017.03.25-	A&B: 3 C: 7	1st, 9th, 17th, 25th of each month	A: 1996-2009 B&C: 1993 - 2015	1.5x1.5

* After 21 March 2017, JMA's Tue forecast is combined with its Wed forecast for convenience

MJO forecasts

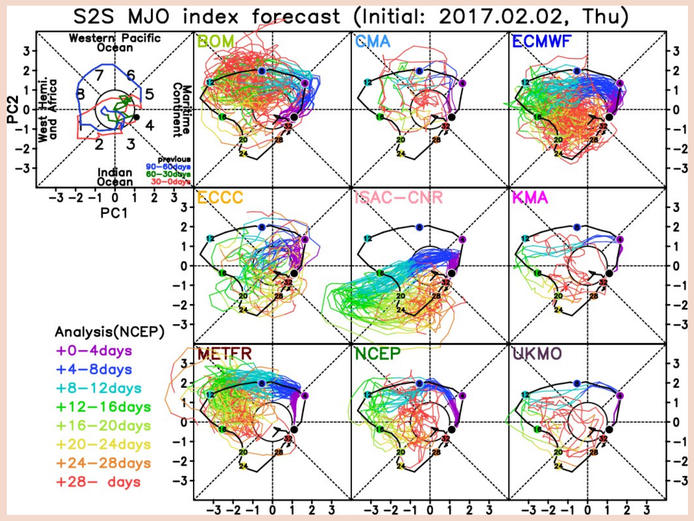


Figure 4: *(top left) NCEP control analysis for real-time multivariate MJO index for the 90 days prior to the initial date of the forecast. (right 9 panels) Real-time multivariate MJO index forecasts by BoM, CMA, ECCC, ECMWF, ISAC-CNR, KMA, METFR, NCEP, and UKMO, initialised on 2 February 2017. The black circle and the black line with numbered circles correspond to the NCEP control analysis. The numbers in the coloured circles indicate the number of days from the initial date. The coloured lines indicate ensemble members. The colour changes reflect the lead-time of the forecasts.*

SST forecasts (anomaly)

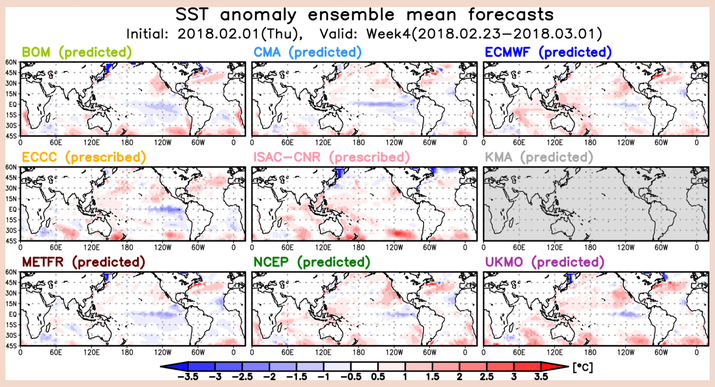


Figure 5: *Ensemble mean forecast of Sea surface temperature anomaly by BoM (yellow-green), CMA (aqua), ECCC (yellow), ECMWF (blue), ISAC-CNR (light pink), METFR (brown), NCEP (green) and UKMO (purple), initialised on 1 February 2018, valid on 23 February – 1 March 2018 (Week 4).*

SST and sea-ice cover forecasts

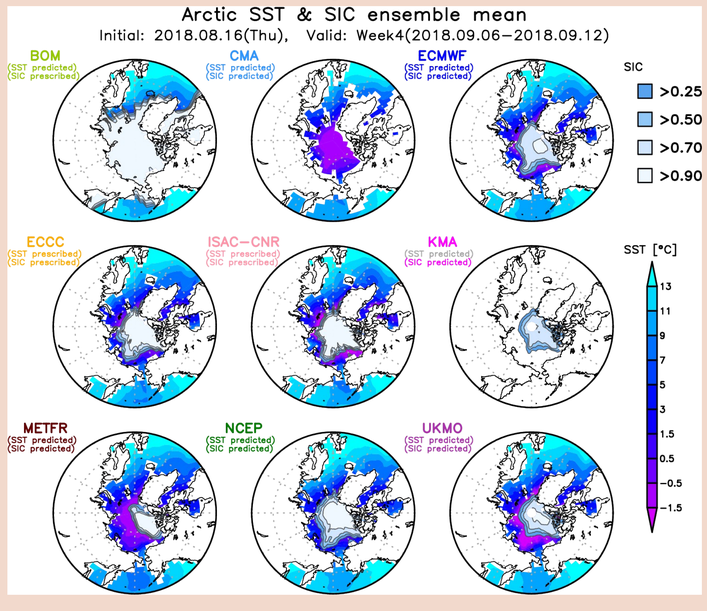


Figure 6: *Sea surface temperature (colour bar at the lower-right corner) and sea ice cover (colour bar at the upper-right corner) forecasts by BoM (yellow-green), CMA (aqua), ECCC (yellow), ECMWF (blue), ISAC-CNR (light pink), KMA (pink), METFR (brown), NCEP (green) and UKMO (purple), initialised on 16 August 2018, valid on 6 – 12 September 2018 (Week 4).*