

Real Time Interaction Between **NCEP** and **DYNAMO**



NOAA/NCEP – UMCP/ESSIC

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Requirements (1)

- **Oceanographers:** Need of forecast of subsurface ocean conditions ~2 weeks before deployment for optimizing the depth of the instruments. Need to forecast the barrier layer location for designing targeted ship cruises (SeaSoar Surway)
- **Aircrafts:** Need forecasts of enhanced activity over the DYNAMO area for up to 72 hours in advance for facilitating flight decisions e.g., coordination with radars and air traffic control, avoid flying in 'salty' areas. In addition, week-1 and week-2 MJO outlooks will facilitate logistics concerning the rotation/downtime of the crews.
- **Radar:** A strong interest in having the 'big picture' of current large scale conditions over the Indian ocean. Pre-planning coordination with aircrafts
- **R/Vs :** Forecast of winds a 10 meters can facilitate their operations and possible repairs.

Requirements (2)

NOAA-NWS-NCEP: Evaluation of analysis and forecasts over data scarce tropical areas. Possibility to enhance forecast skill of MJO related high-impact weather events over the US and the global tropics through (eventually) optimized observing networks and better model parameterizations in both ocean and atmosphere models.

Geographical areas of interest

- The 'big picture' : 30E - 160E, 20S – 20N
- Aircraft operations area: 70E – 85E, 8S – Eq.

Lead times

- Monitoring and nowcast
- Day 0, Day 1, Day 2
- Week 1, Week 2

Initialization: 00Z, 06Z, 12Z, 18Z

Status

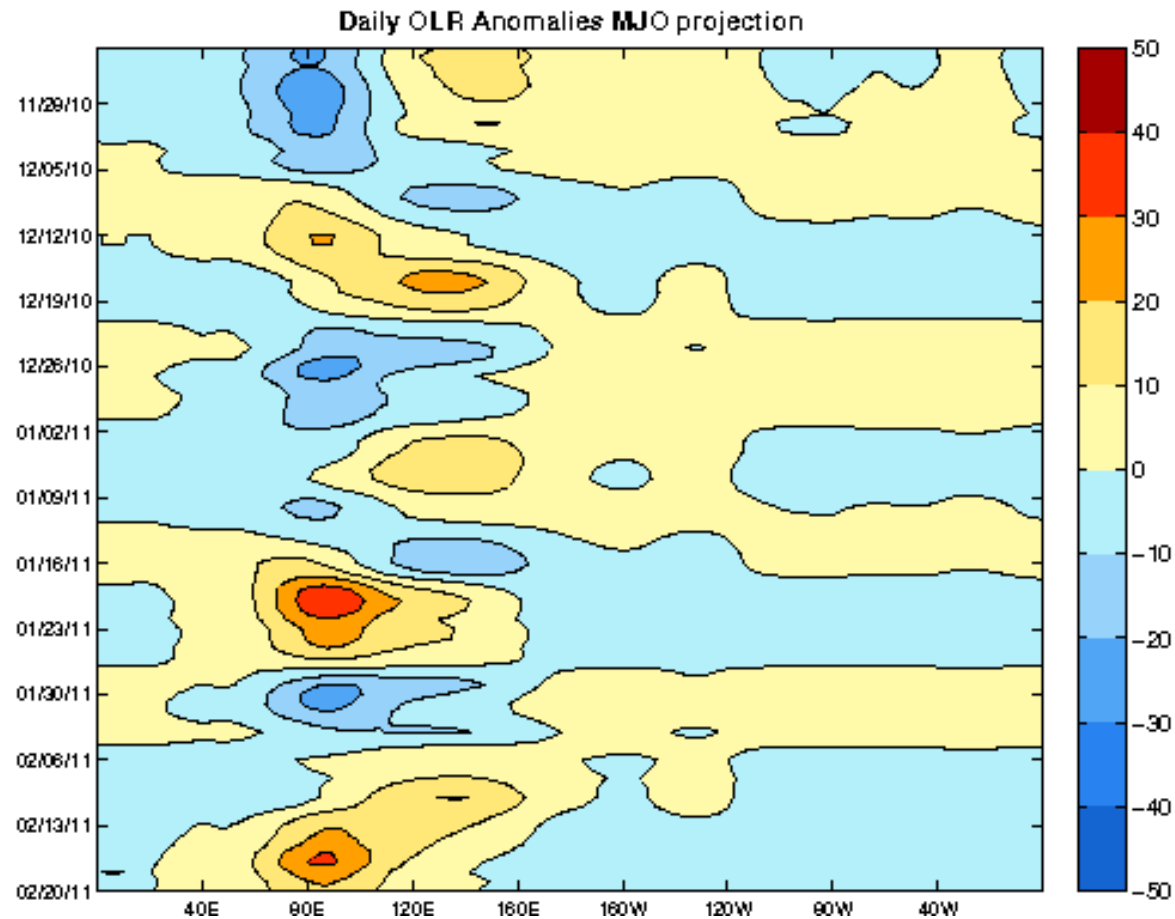
Currently

- Monitoring fields are already transmitted daily to EOL. We are accepting comments and suggestions on the format through-out the continuation of the dry run
- A text/graphic discussion of previous, current and future conditions over the Indian Ocean (and the global tropics) is updated every Tuesday and if necessary for DYNAMO needs (pending funding) on Friday.
- Some model analysis and forecasts will enhance the data flux from NCEP to EOL in the near future.

Pending funding

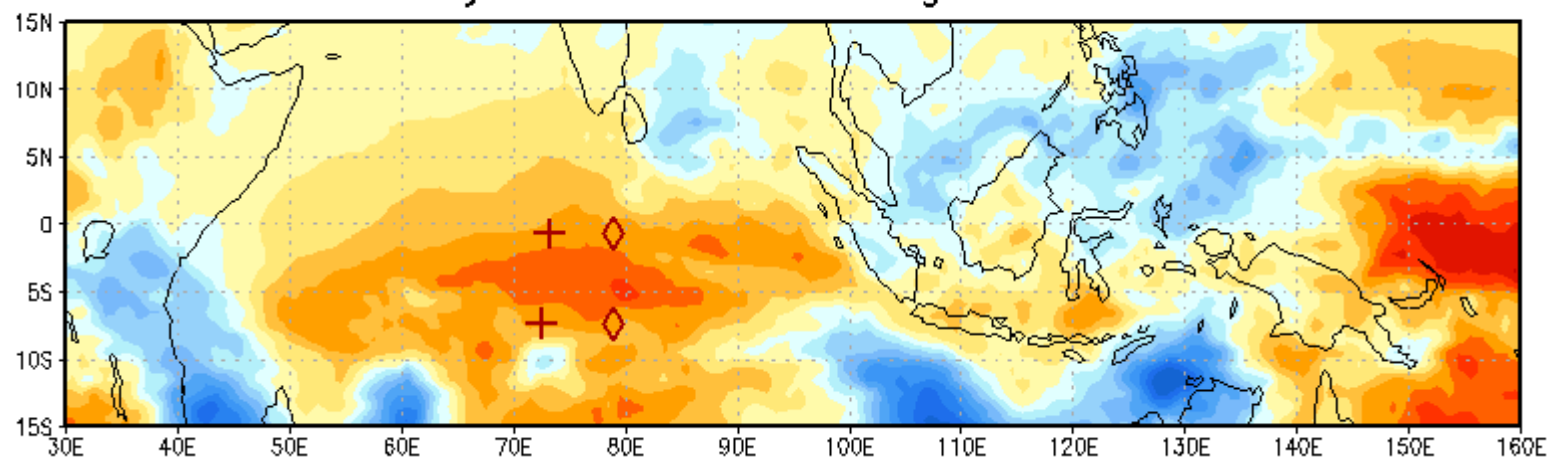
- Include specific Aircraft/Radar/Vessel requests
- Forecast reliability estimates. Forecast and analysis verification after direct feedback from the field. Probabilistic products.
- Data assimilation issues – Verify that data from the campaign go all the way through to the NCEP analysis chain.

Examples of monitoring (from dry-run):

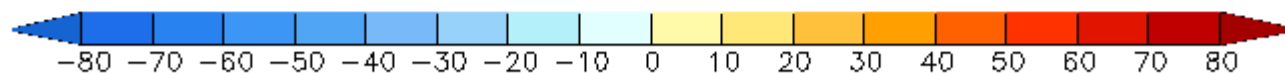
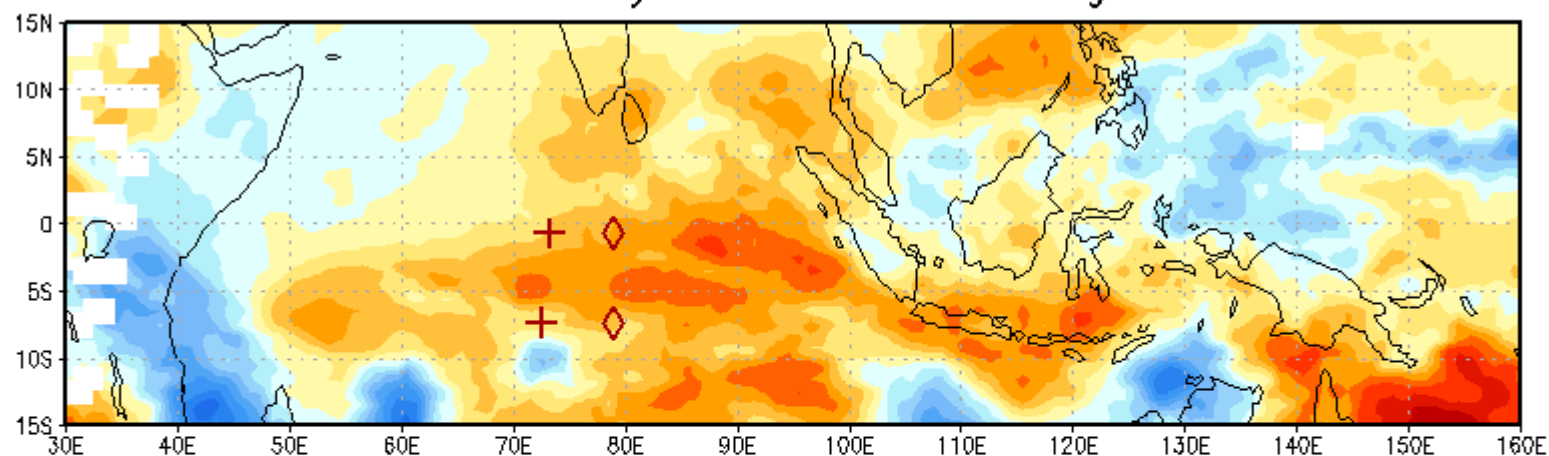


Daily OLR projected to MJO mode

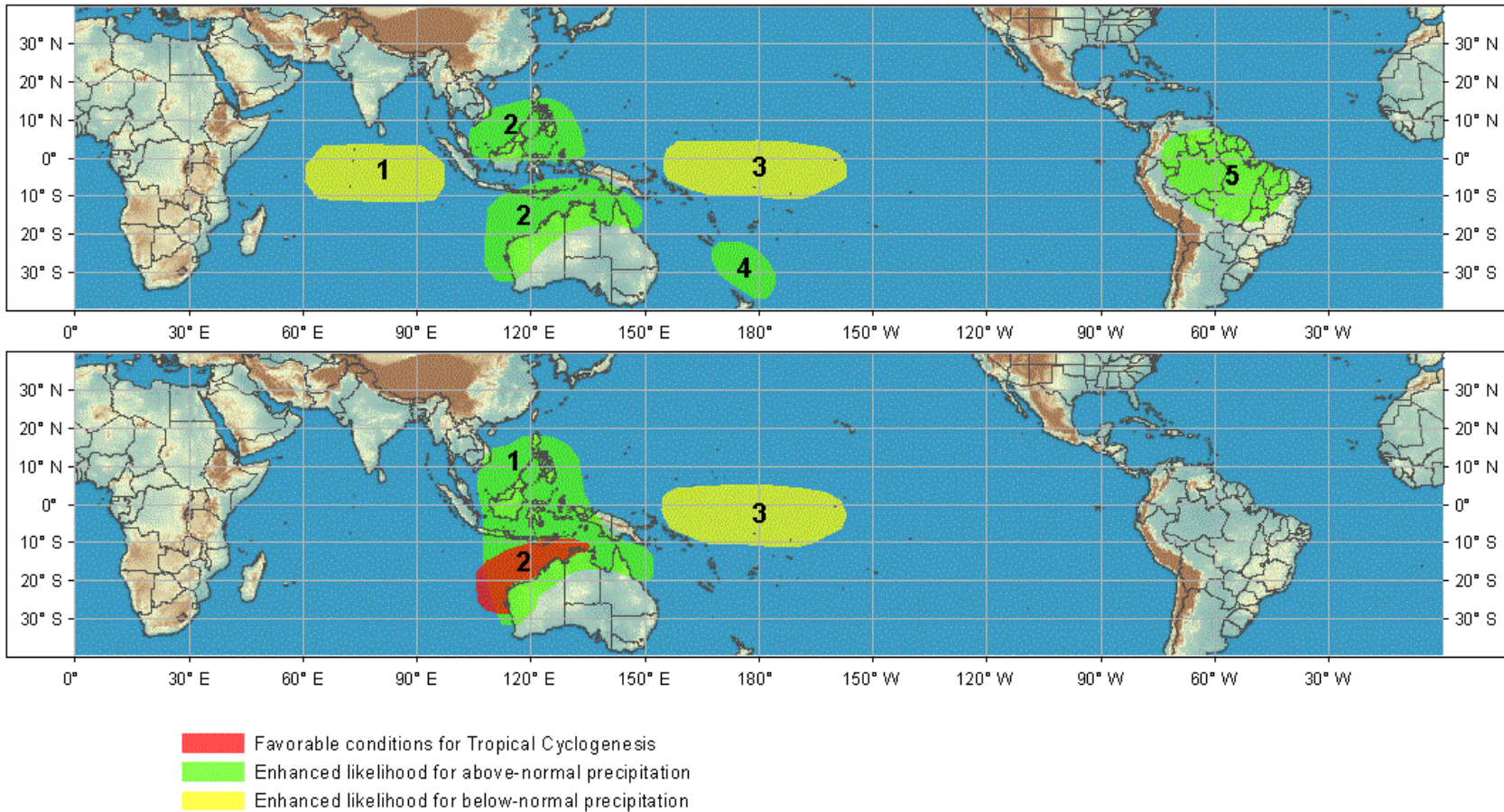
OLR weekly anomalies starting -- 14FEB2011



ENSO filtered OLR weekly anomalies starting -- 14FEB2011



Examples of outlooks (from dry-run):



Tropical cyclongenesis is the development of a tropical cyclone of at least tropical storm strength.

Above-normal (below-normal) precipitation means weekly total rainfall in the upper-third (lower-third of the historcial range).

Current GTH Forecast for next 2 weeks

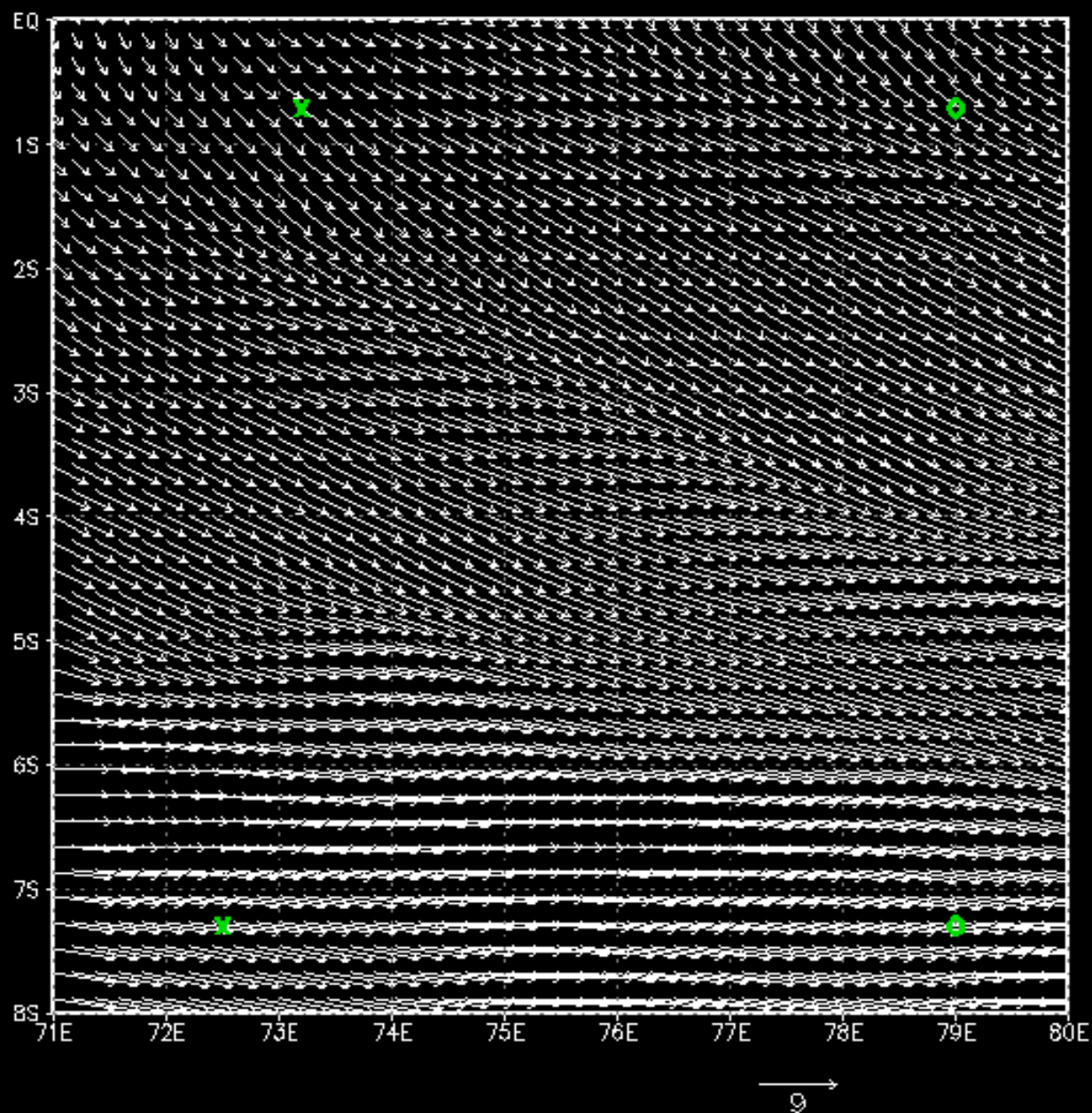
Examples of Forecast over the DYNAMO area

-- 27km x 27km

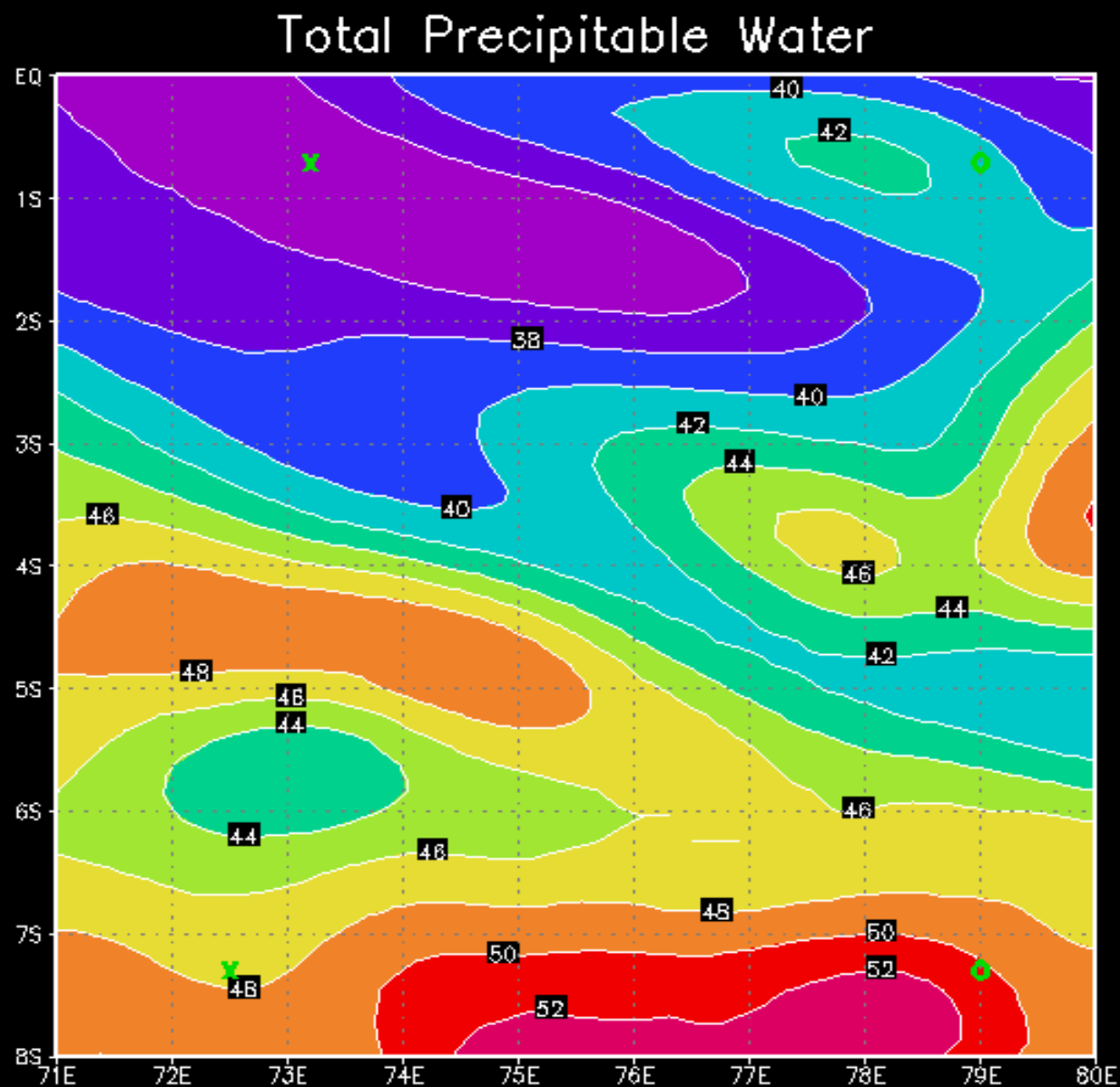
Initialized at 00Z, 06Z, 12Z, 18Z

Forecast from Saturday February 26th 12Z valid Sunday February 27 at 09Z

Wind at 1000 hPa



Forecast from Saturday February 26th 12Z valid Sunday February 27 at 09Z



Conclusions

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- Some model analysis and forecasts will be added to the data flux from NCEP to EOL in the near future.

Pending funding

- **Include DYNAMO specific Aircraft/Radar/Vessel forecast requests**
- **Forecast reliability estimates. Forecast and analysis verification after direct feedback from the field. Probabilistic products.**
- **Data assimilation issues – Verify that data from the campaign go all the way through to the NCEP analysis chain.**