Global Tropics Hazards And Benefits Outlook

6/13/2017

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Outline

1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts
Outlook Review

TS Calvin (E. Pac)
Peak: 40 mph
June 11-13

TS Merbok (W. Pac)
Peak: 50 mph
June 11-12

Cool shading
More clouds/rain

Warm shading
Less clouds/rain
Synopsis of Climate Modes

**ENSO:**
- ENSO-neutral is favored (50-55%) through Northern Hemisphere fall 2017
- The next ENSO diagnostic discussion release will be 13 July.

**MJO and other subseasonal tropical variability:**
- The RMM index suggests an emerging MJO over Africa, other analyses support this signal being instead tied to Kelvin wave activity.

- Lower frequency signals are drifting eastward in the Indian Ocean and possibly over the Maritime Continent (potentially masked by westward moving variability).

- ECMWF guidance is favored for the outlook period, which continues a pair of ongoing Kelvin waves, with one currently near the Date Line and another near the Prime Meridian.

**Extratropics:**
- The extended range temperature and precipitation forecasts for the U.S. are not likely to be impacted by MJO activity. A passing Kelvin wave could help initiate tropical cyclogenesis near the Yucatan late in Week-1 or early in Week-2.
Broadly wave-1 pattern, Kelvin wave over Indian Ocean.

Broadly wave-1 pattern, Kelvin wave over Maritime Continent and another in the East Pacific.

Wave-2 pattern with two centers of action over SE Asia (monsoon, TS Merbok) and Atlantic (Kelvin wave).
GEFS likes the Kelvin wave over Africa initially then remains relatively stationary as other Kelvin wave’s influence grows.

ECMWF shows weak intraseasonal signal, as two Kelvin waves interfere with RMM signal.

JMA supports uncharacteristic westward propagation of signal linked to a Rossby wave.
**Kelvin waves** the big players with secondary impact from **Rossby waves**.

**Low-frequency pattern** showing up here (filtered as MJO by algorithm, but time scale appears too long).
Five-Day Graphical Tropical Weather Outlook
National Hurricane Center Miami, Florida

0-48 hrs: ~0%
5 days: 20%
Consensus-based Probability (%) of TC genesis using deterministic models: GFS, NAVGEM, CMC, ECMWF
For forecasts during the 00-120h period from initial time = 2017061300

Forecast hour shown at beginning of each track is first lead time the storm was detected in model
Connections to U.S. Impacts
AO: Observed & ENSM forecasts

1000mb Z (Obs: 14Feb2017 – 13Jun2017)  AD index
mean=0.2681

1000mb Z (7day Forecast)  AD index
mean=0.0135  cor(w/obs)=0.8025

1000mb Z (10day Forecast)  AD index
mean=-0.2074  cor(w/obs)=0.5987

1000mb Z (14day Forecast)  AD index
mean=-0.2702  cor(w/obs)=0.4124
Week 2 – Temperature and Precipitation

Today: possibly wetter in Southwest - some indications of monsoonal moisture (high over CO, low over Gulf of California, inverted trough/tropical system in Gulf of Mexico)
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

**Week 1 - Valid: Jun 14, 2017 - Jun 20, 2017**

**Week 2 - Valid: Jun 21, 2017 - Jun 27, 2017**

**Confidence**

- **High**
- **Moderate**

**Tropical Cyclone Formation**
- Development of a tropical cyclone (tropical depression - TD, or greater strength).

**Above-average rainfall**
- Weekly total rainfall in the upper third of the historical range.

**Below-average rainfall**
- Weekly total rainfall in the lower third of the historical range.

**Above-normal temperatures**
- 7-day mean temperatures in the upper third of the historical range.

**Below-normal temperatures**
- 7-day mean temperatures in the lower third of the historical range.

Product is updated once per week, except from 6/1 - 11/30 for the region from 120E to 0, 0 to 40N. The product targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.