Weather discussion for Sunday, February 5, 2012
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Overview: The intense upper-level flow over the region for the past couple of days is expected to relax over the next few days. Convection along the monsoon trough will continue preferentially forming over the warmer waters southwest of Panama. A broad upper-level trough will aid convective develop and allow anvils to stream northeastward.

A research flight from MROC to the equator west of the Galapagos is planned for Tuesday the 7th. Convection is expected immediately east of 92.5W and along the northern waypoint at 5N. Convection is also expected along the east-west flight path.
Gap wind flow is expected to be present on Tuesday although not as strong as last week. The gap winds line up quite well with the axes of minimum SST and the flight will attempt to probe the strong SST gradients from 5 to 10 N.

Almost no low-level cross-equatorial flow is expected.
WRF suggests greatest chance of convection at 18z to be near 4N, 90W and near 6N, 86W.

The path from WP4 to WP6 has the greatest risk of convective problems as the warm SSTs in this area have led to persistent convection over the past few days.
Clouds will be a concern near WP6 with a 2 degree wide band of convection expected. Only scattered clouds should be found south of 1N.

The line from WP4 to WP6 should also have significant risk of clouds.
RH cross-section for the N-S leg from 3 S to 5 N shows potential for deep convection near 4 N. Southerly flow is indicated above 200 mb.
12 km chart (FL390) from WRF

A broad upper-level trough is expected to cover the study region with southwesterly flow over areas east of 99W.
This plot shows wind barb at 3 different levels – 700 m (black), 3 km (red), and 12 km (blue) and is an attempt to show inflow and outflow directions for convection.

Deep convective anvils should blow off to the NE. Air from the sfc to 3 km is generally from the east. This persistent flow suggest the air mass will be polluted.