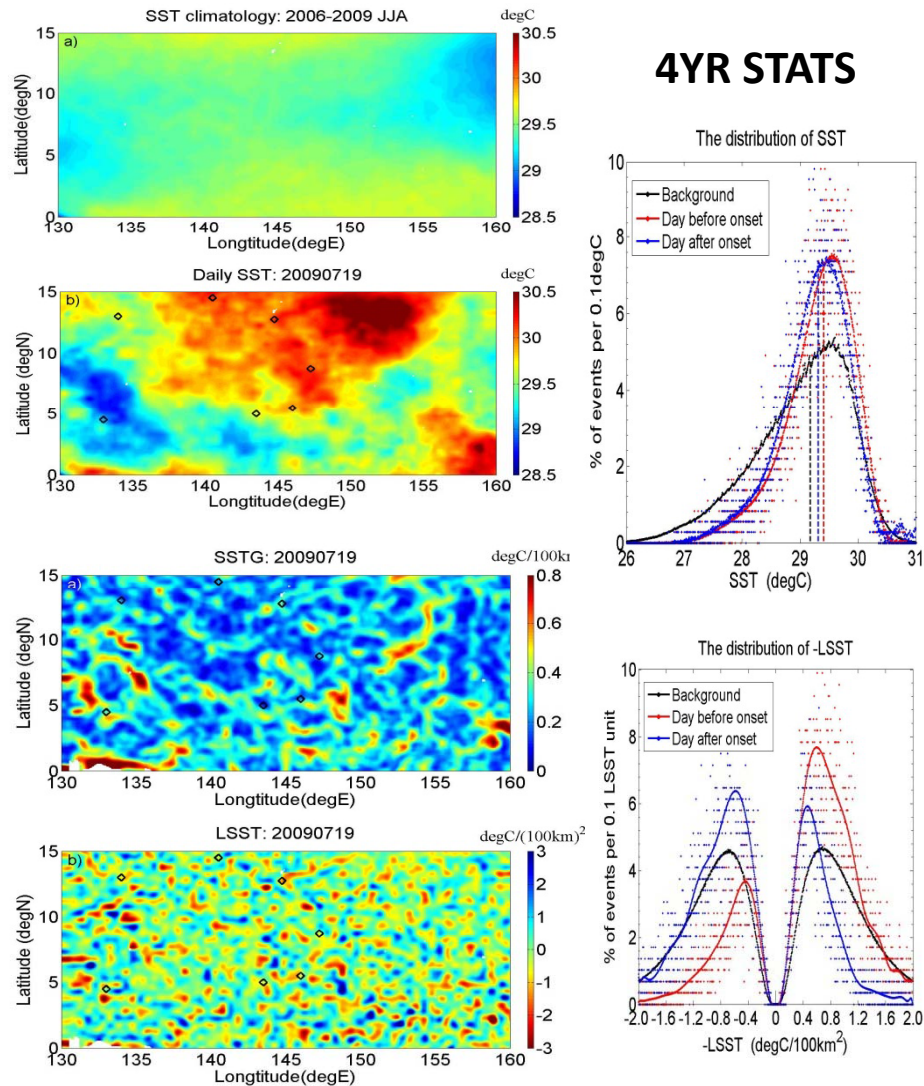


# RAINFALL ONSET FREQUENCY/ LOCATION

# CONCLUSIONS



Li and Carbone, JAS 2012 (October)

## W.R.T. rainfall excitation and lifecycle

3/4ths of 10,000 events start at conv.LSST

Onset favored in the mid-range of SST;

relatively disfavored at extreme SST;

favored at leeward “shore” of a warm patch

Convection is strong and long-lived when a

critical level is present (PBL westerly) and

easterly shear is  $\geq 10^{-3} \text{ s}^{-1}$

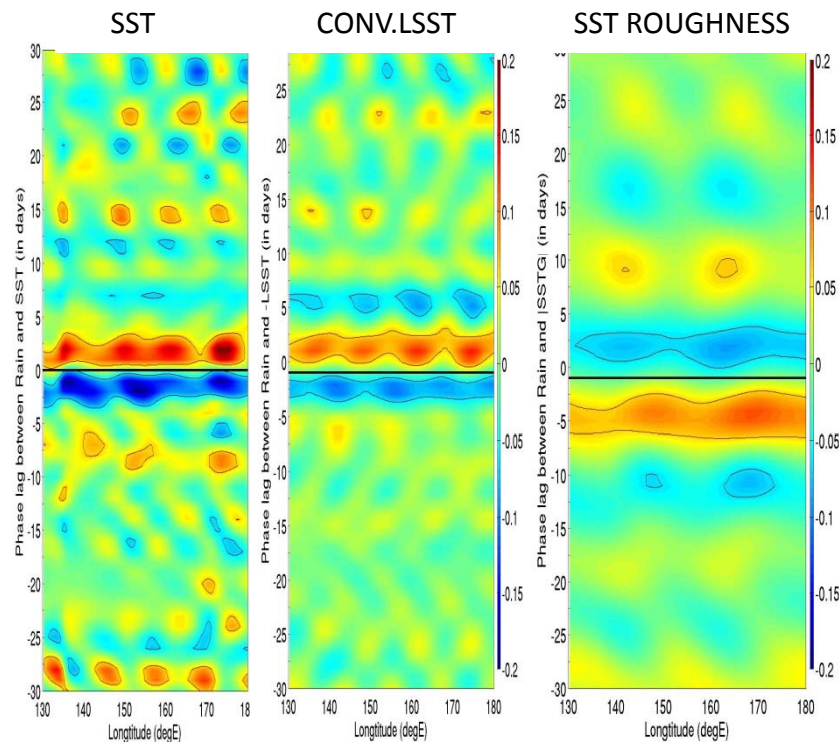
Organized convection typically dissipates in

environments with lower shear and SST.

# PHASE OF RAINFALL WITH RESPECT TO SST STRUCTURE

## CONCLUSIONS AND QUESTIONS

### LEAD-LAG CORRELATION WITH RAIN



- **Phase of rainfall W.R.T. SST structure**
- SST leads rainfall by 1-3 days
- Conv.LSST leads rainfall 1-3 days
- Texture of SST field lags rainfall 2-5 days
- **W.R.T. MJO periodicity**
- LSST field varies - 20-100 days; 5-30° Lat/Lon
- LSST field may be rough, smooth, bias+, bias-
- **Which fluid is in charge; when, where, why?**
- Proximate causes of systematic LSST variation?
- Phase relationship to MJO evolution?
- Effects of non-linearity in coupled responses?