Moisture Impact on Monsoon Depressions

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IMPROVEMENT AND CALIBRATION OF CLOUDS IN MODELS
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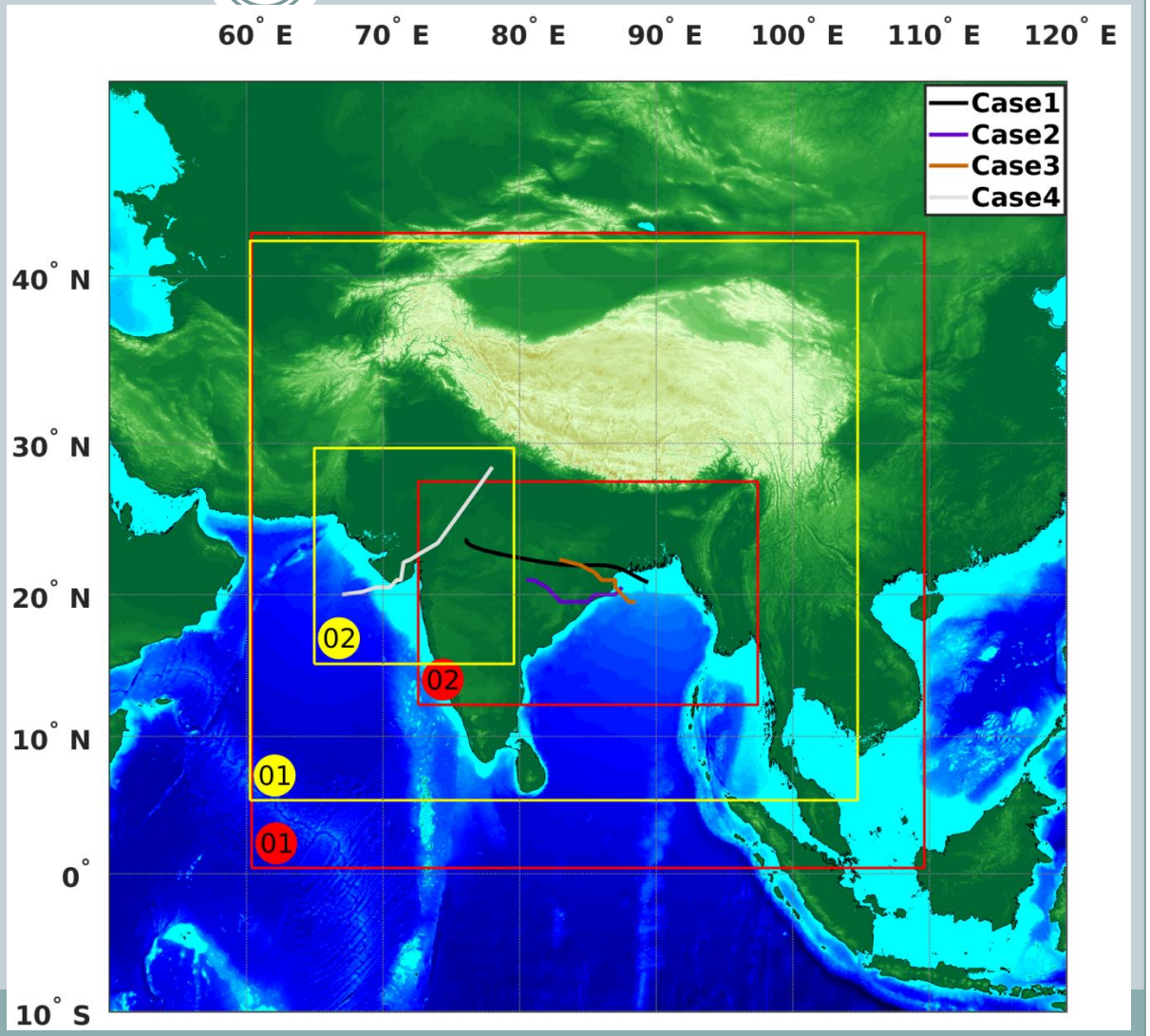
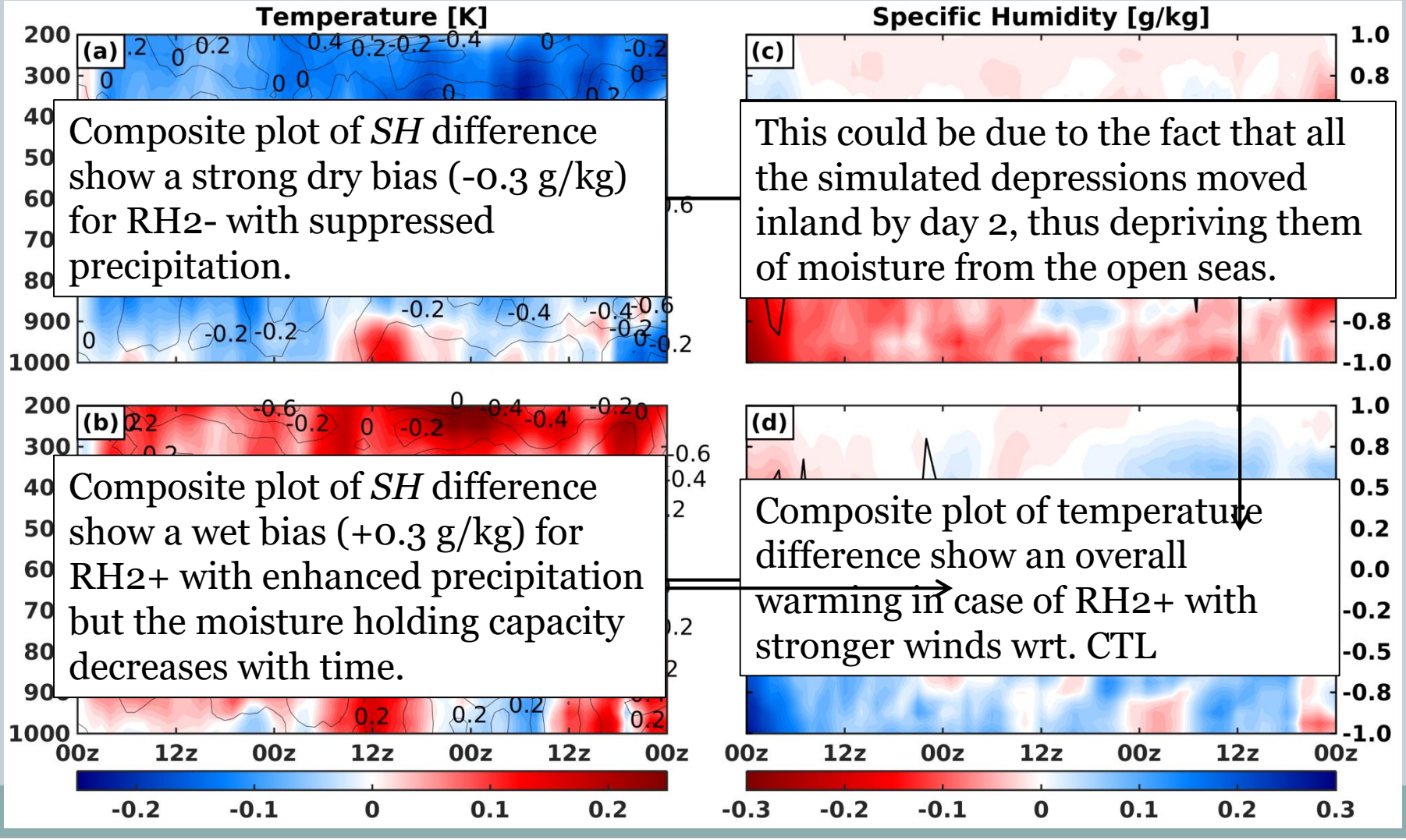
Simulations of MDs

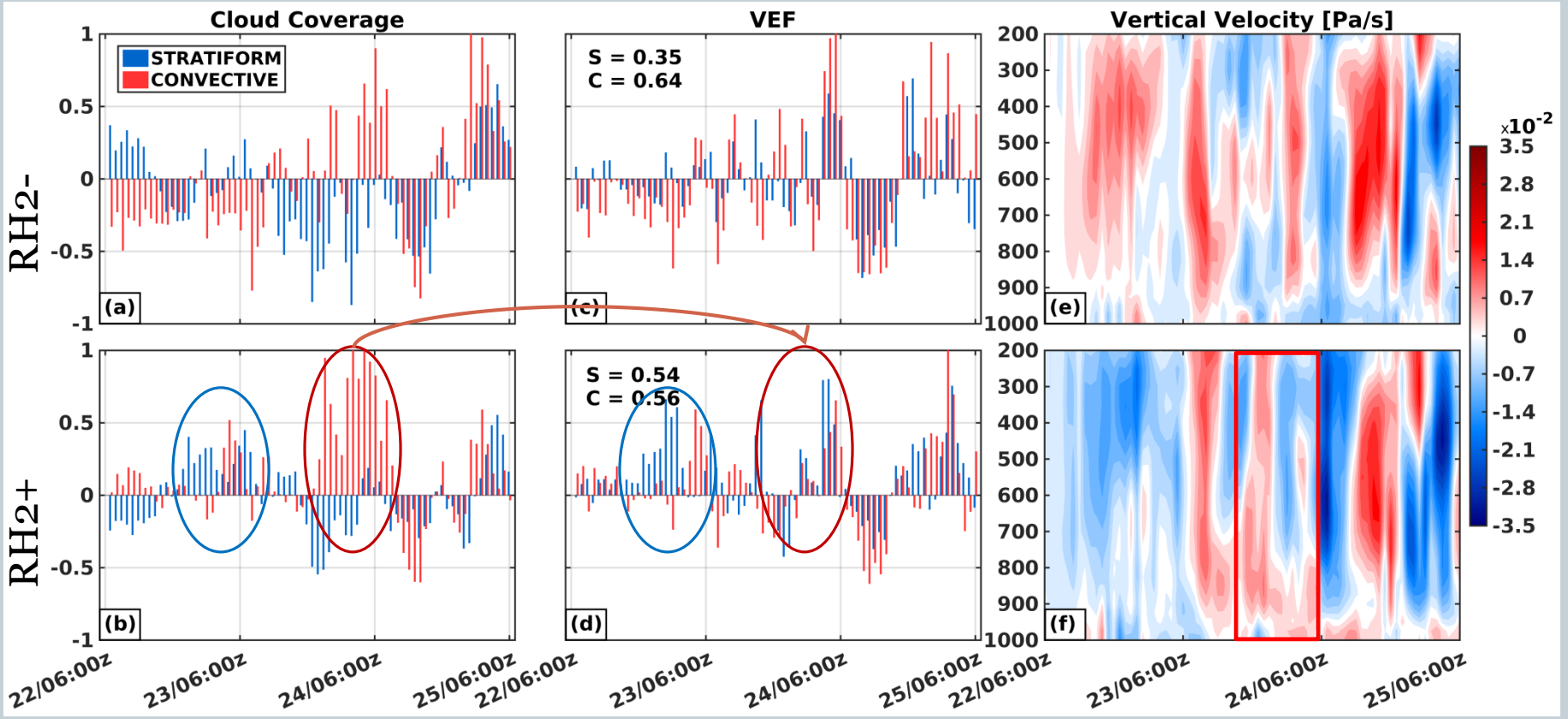
- The domain in red is used for cases 1 through 3.
- The domain in yellow is used for case 4.



Temperature and Humidity



Cloud Heating Signatures



S: Correlation between stratiform coverage and stratiform heating

C: Correlation between convective coverage and convective heating

Cloud Sensitivity

Level wise correlations are computed between cloud coverage and VEF to ascertain which part of the troposphere responds the most to RH perturbations for a domain bounded by 66°E–77°E longitude and 18°N–27°N latitude.

RH2-				
	Lower (1000 – 750 hPa)		**Mid (700 – 500 hPa)**	
	Stratirform	**Convective**	**Stratiform**	**Convective**
Correlation	0.62	0.71	0.32	0.69
RH2+				
Correlation	0.80	0.74	0.25	0.67

- Lower tropospheric RH perturbations show higher sensitivity towards stratiform clouds.
- Convective clouds are not much affected both in the lower, as well as in the mid-troposphere.