

# Air-Sea Interaction Activities within the MJO TF

Charlotte DeMott

WMO<sup>1</sup> WGNE<sup>2</sup> MJO TF

1: World Meteorological Organization

2: Working Group on Numerical Experimentation

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- **Matthew Wheeler**, Co-chair, CAWCR
- **Charlotte DeMott**, CMAP/CSU
- **Jon Gottschalck**, NOAA/NCEP
- **Daehyun Kim**, Lamont-Doherty EO Columbia Univ
- **June-Yi Lee**, University of Hawaii
- **Tomoki Miyakawa**, AORI/ University of Tokyo
- **Richard Neale**, NCAR
- **Suryachandra Rao**, Indian Inst Tropical Met
- **Camille Risi**, Lab de Meteorologie Dynamique
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**These people also attend CMAP meetings!**



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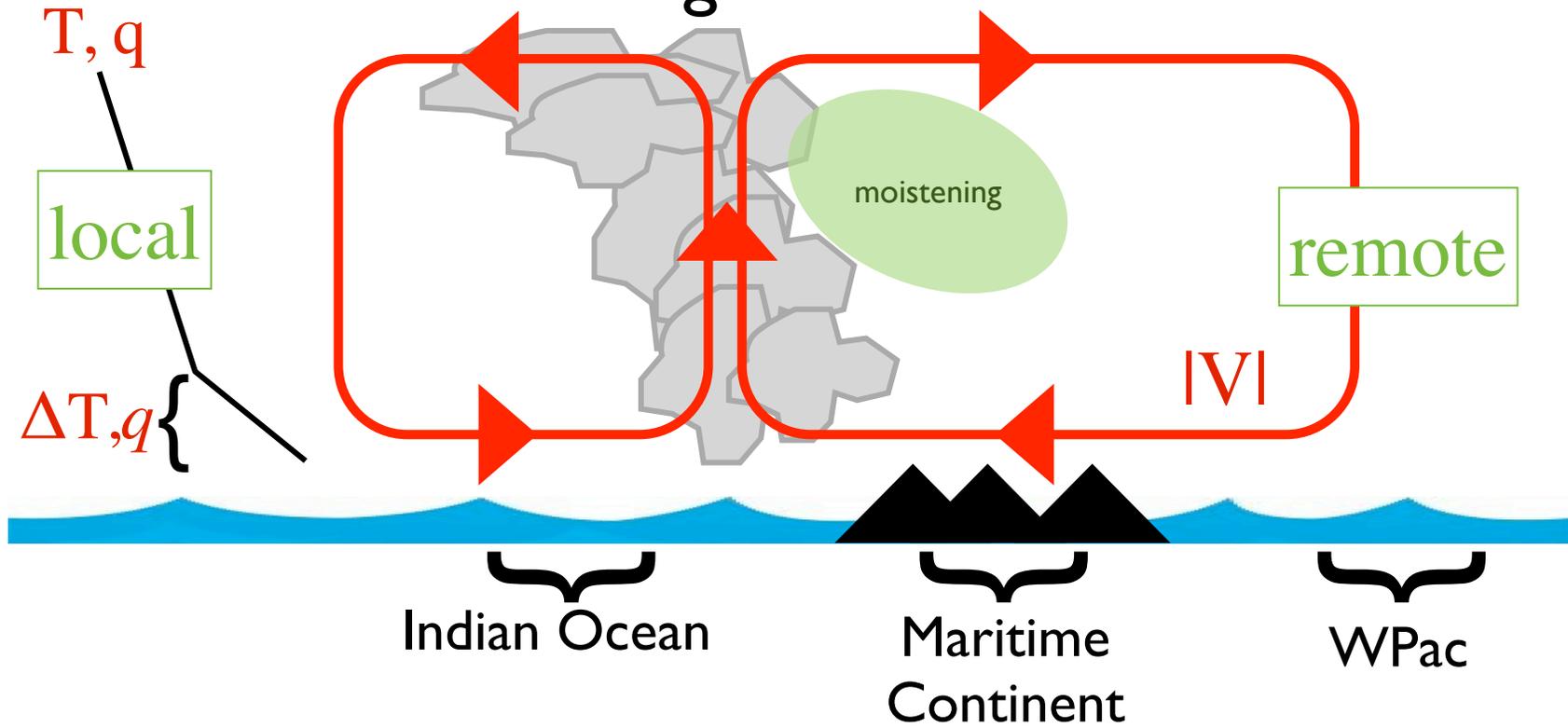
# MJO TF “Terms of Reference”

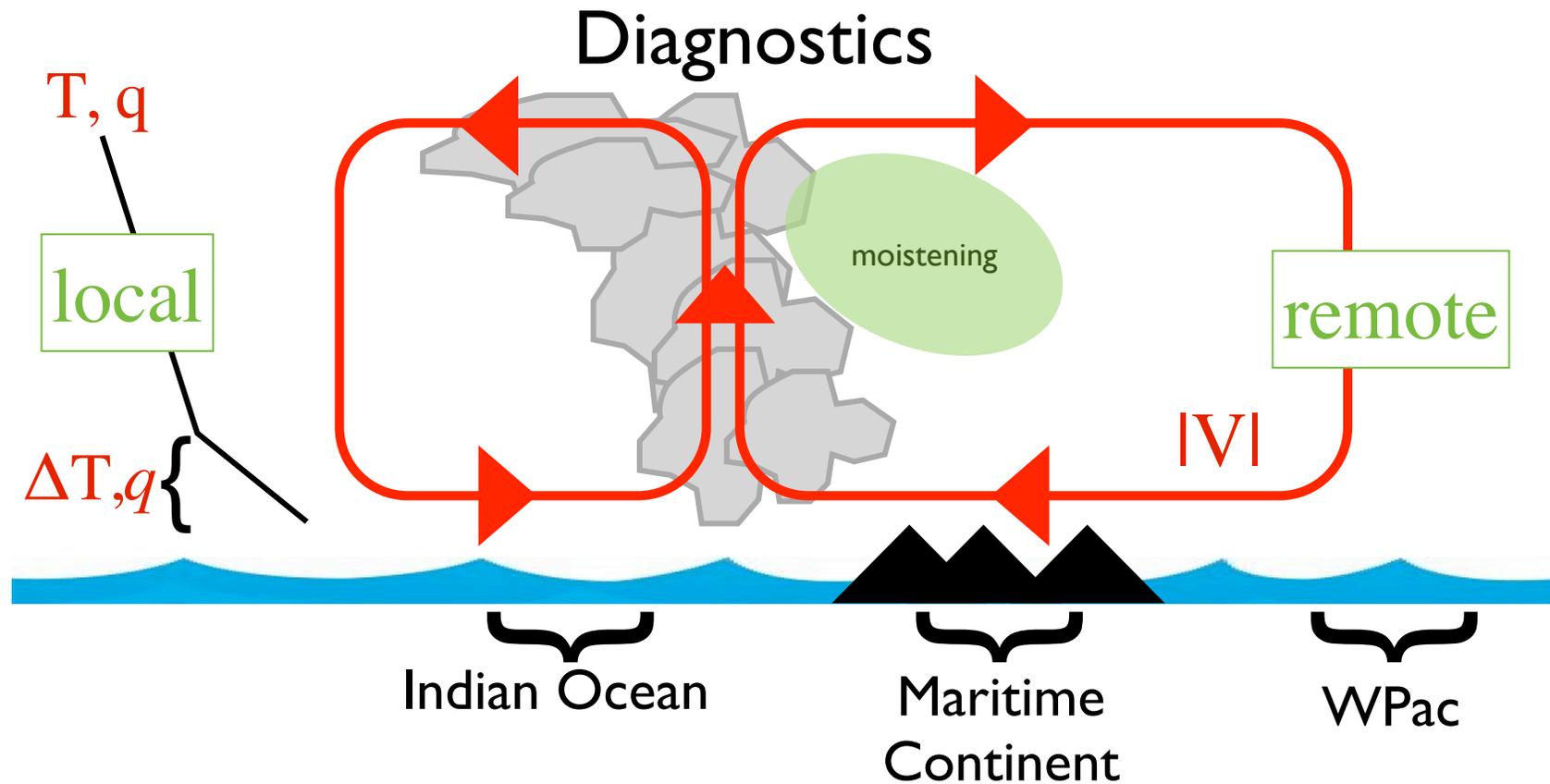
- Develop and promote **process-oriented diagnostics** of physical mechanisms for successful MJO simulation.
- **Analyze multi-scale interactions** and processes critical to the MJO, *especially wrt vertical structure and diabatic processes.*
- Promote the **ongoing evaluation of real-time forecasts** of MJO, BSISO.
- Contribute to the **assessment of CMIP5 model MJO capabilities.**
- **Analysis of MJO air-sea interaction**, including *development of diagnostics related to MJO simulation.*

# MJO TF Air-Sea Interaction Activities

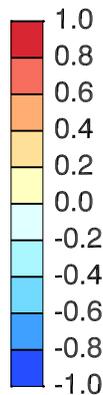
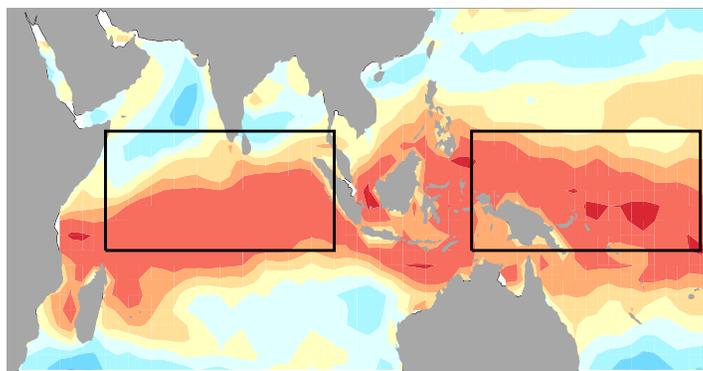
- Write a review article summarizing the current understanding of air-sea interaction on the MJO.
- Develop process-oriented diagnostics of oceanic influence on the MJO.
- Develop modeling experiments to assess the fidelity of air-sea interaction at intraseasonal timescales.

# Diagnostics

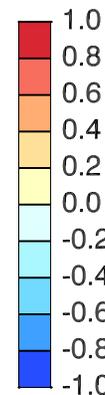
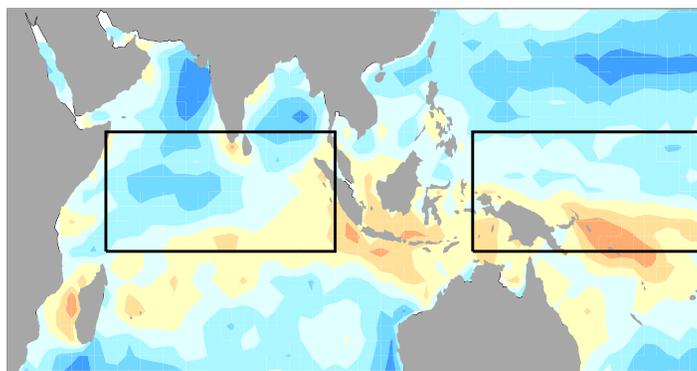




**LH** ratio difference:  $|V|' - (\Delta q)'$



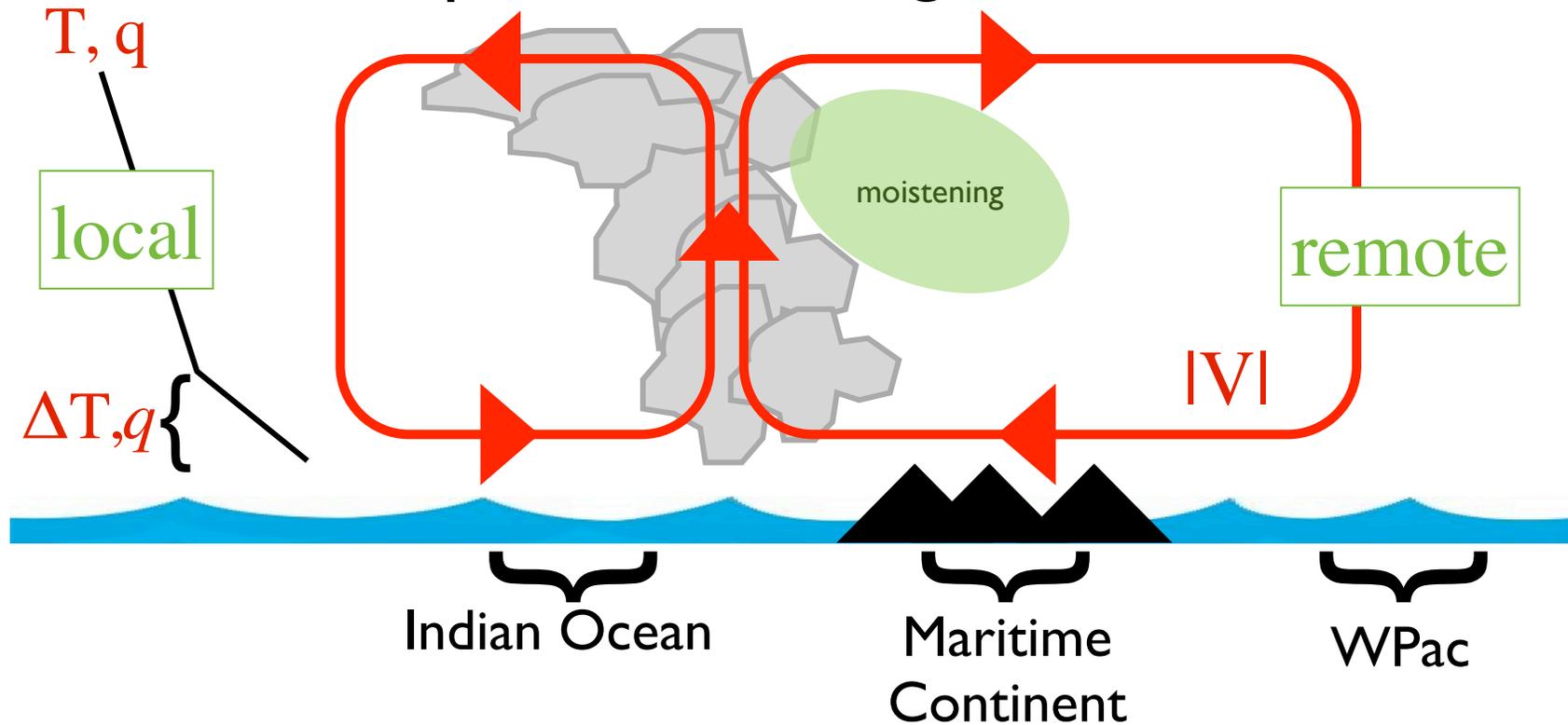
**SH** ratio difference:  $|V|' - (\Delta T)'$



wind speed dominates

$\Delta q, \Delta T$  dominates

## Proposed modeling studies



- Allow or limit local SST effects by region
- Limit remote effects
- MC propagation barrier: is topography or land surface the issue?