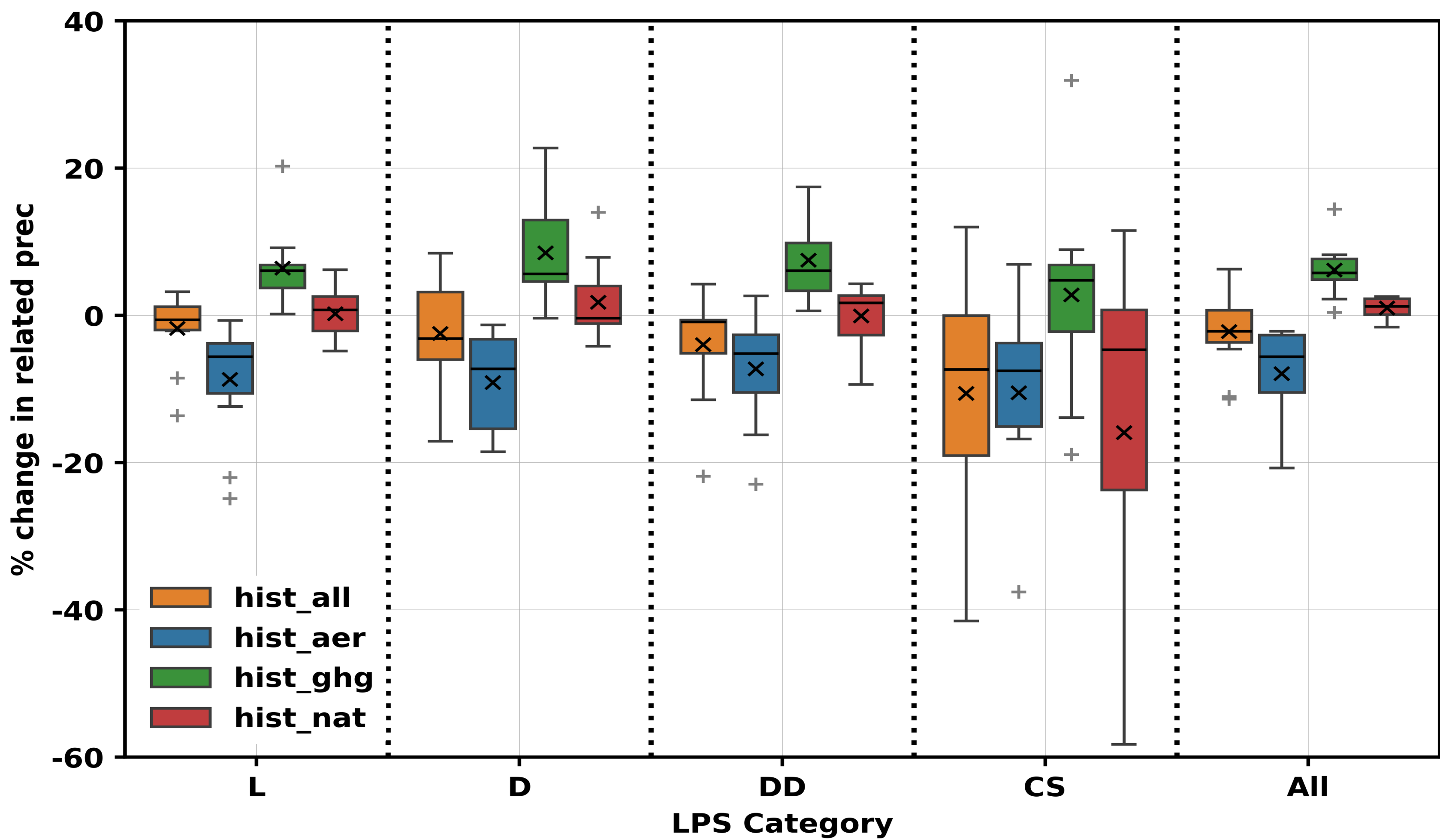
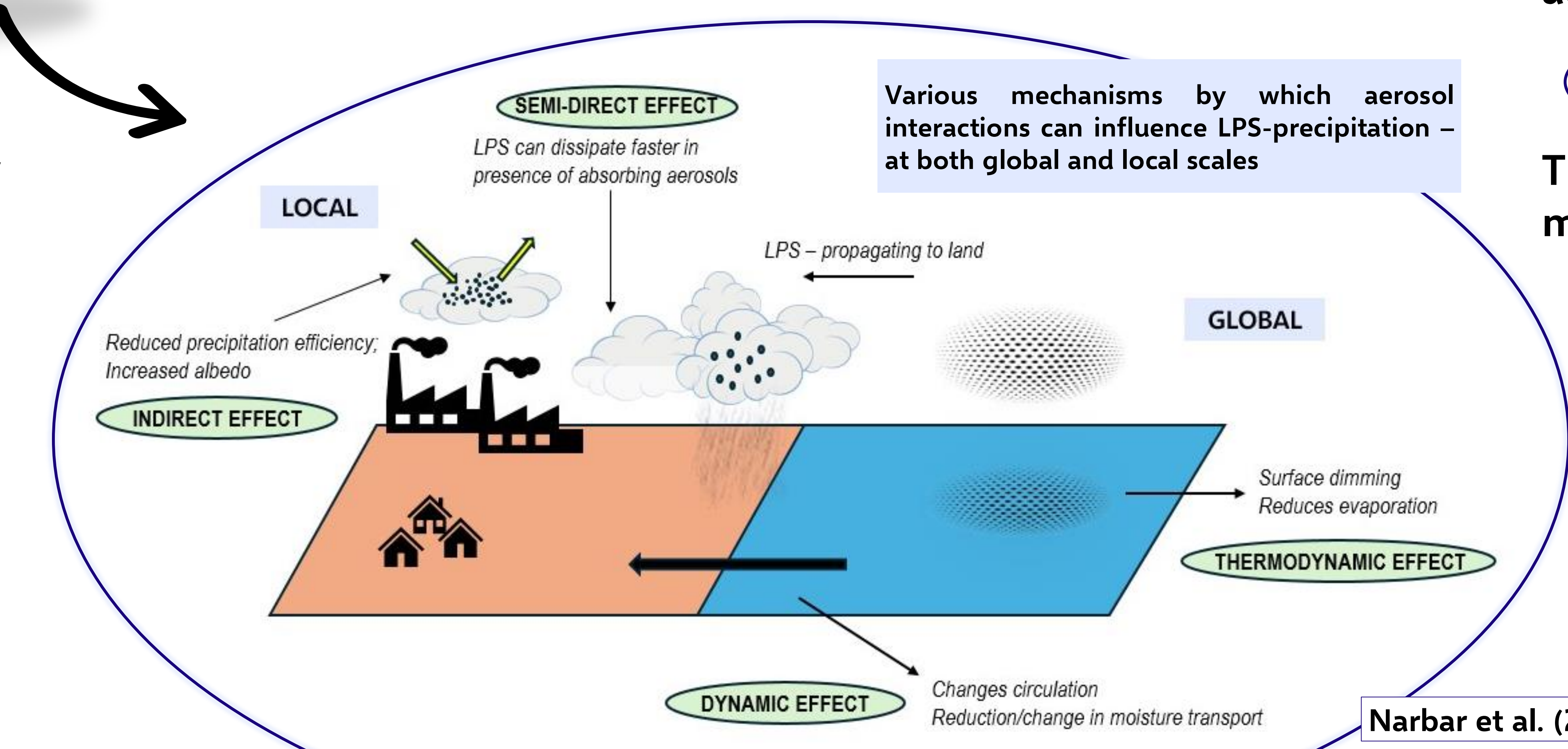
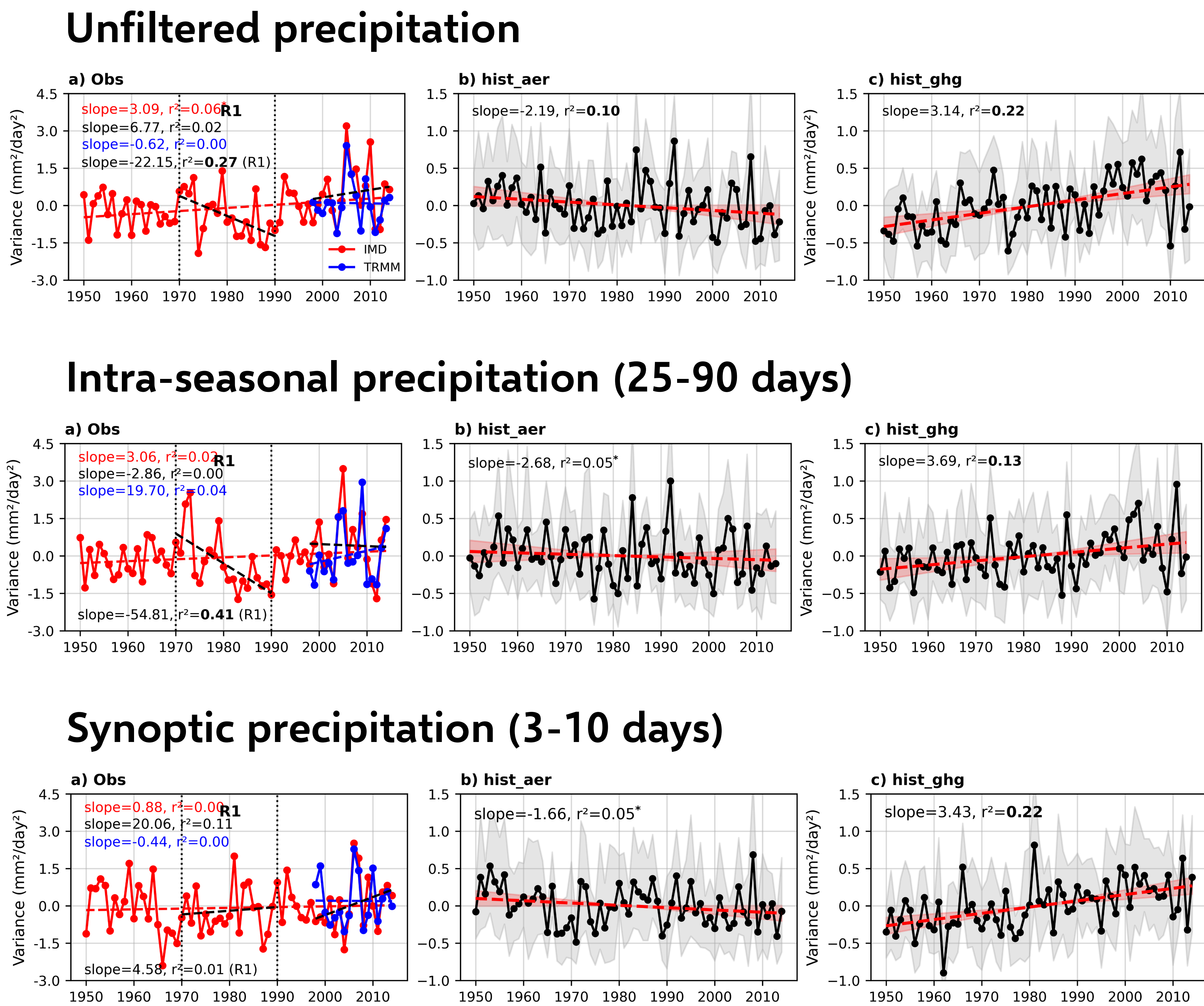
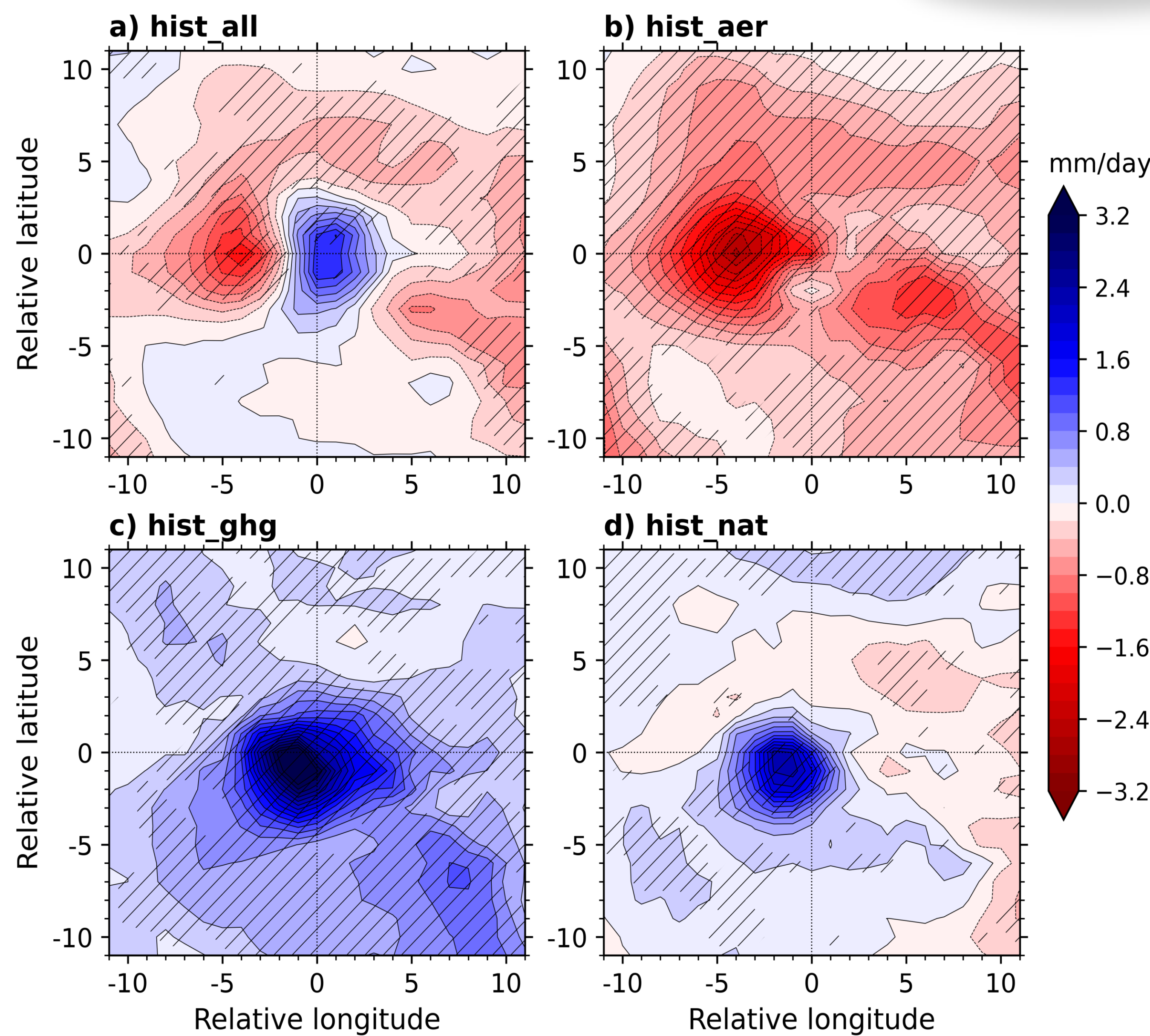
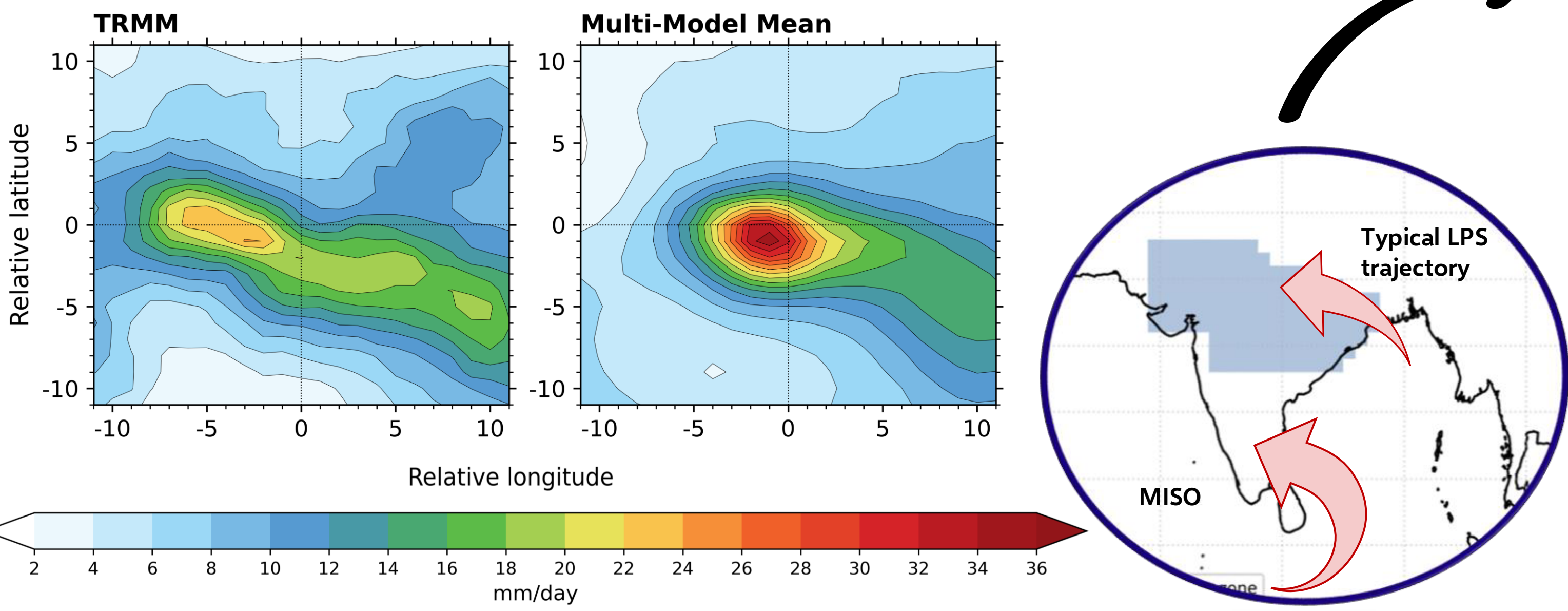


Contrasting Effects of Aerosols and Greenhouse Gases on Subseasonal Variability of the Indian Summer Monsoon

Monsoon Low Pressure Systems (LPS) are key synoptic-scale features of the ISM. They are relatively weak cyclonic storms, with a horizontal scale ~1000-2000km, and lifetimes of about 3-7 days.

Subseasonal variability plays a critical role in shaping both the seasonal mean and spatial distribution of rainfall during the ISM.

DAMIP single-forcing experiments are used to examine impacts of aerosols and GHGs.



Historically, aerosols show a reduction in LPS-related precipitation by up to 8% whereas GHGs enhanced it by ~6%.

Aerosols reduce precipitation variance at all scales while GHGs increase it. This has important repercussions for India’s agricultural and water-resource sectors.

REMEMBER
The results are subject to the constraints imposed by the models’ assumptions and their responses to aerosol forcing.

CONCLUSION
Due to the opposing influences of aerosols and GHGs on subseasonal ISM variability – near future monsoon will depend critically on balance between aerosol and GHG growth.

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