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Cooperative Institute for Satellite Earth System Studies

Sources of Tropical Subseasonal Skill in the CFSv2

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NASA PMM Grant NNX16AE33G

NOAA CTB Grant NA18OAR4310297

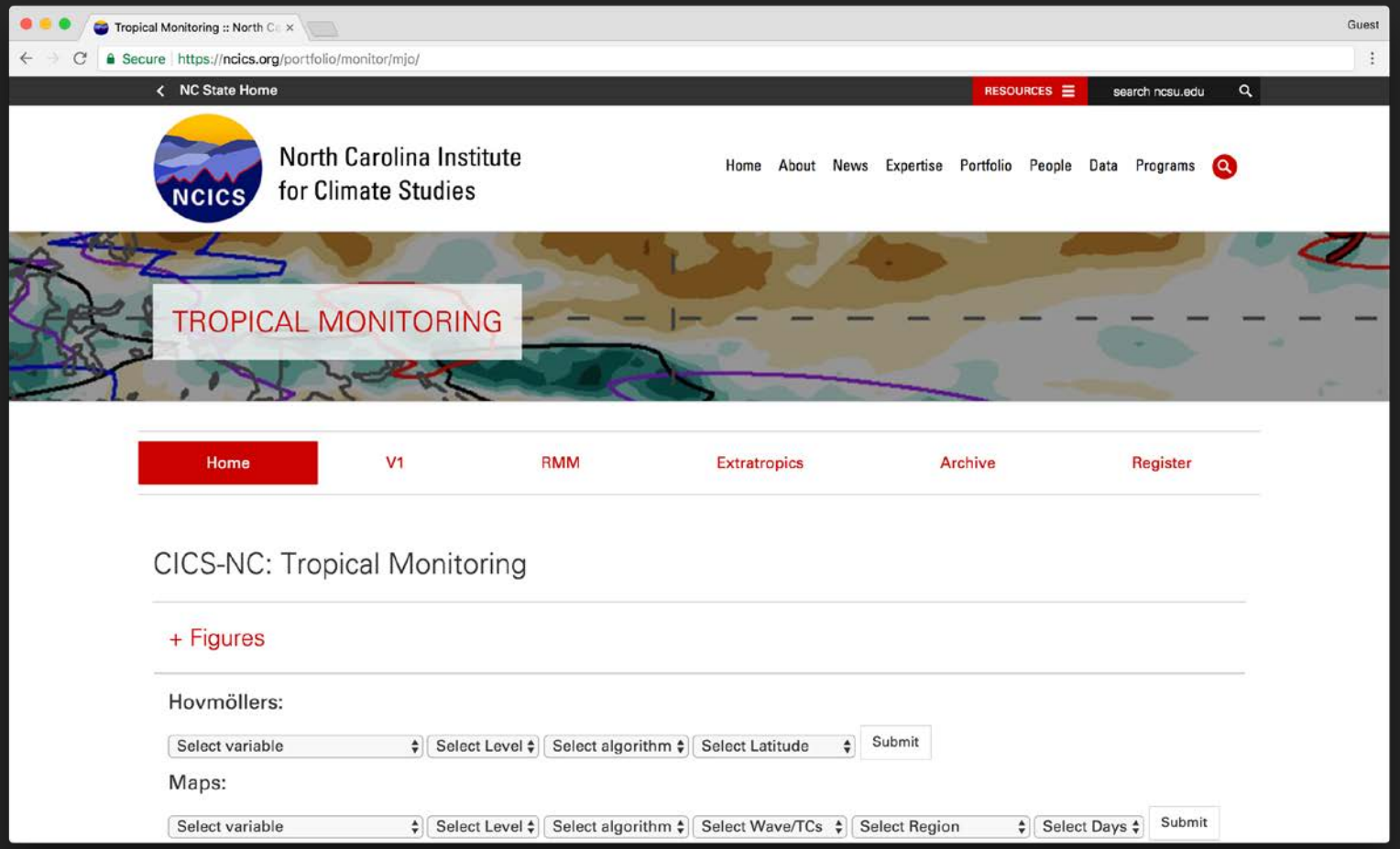
Key Points

Most subseasonal rainfall skill comes from persisting ENSO effects

MJO contributes to skill over the Indian Ocean

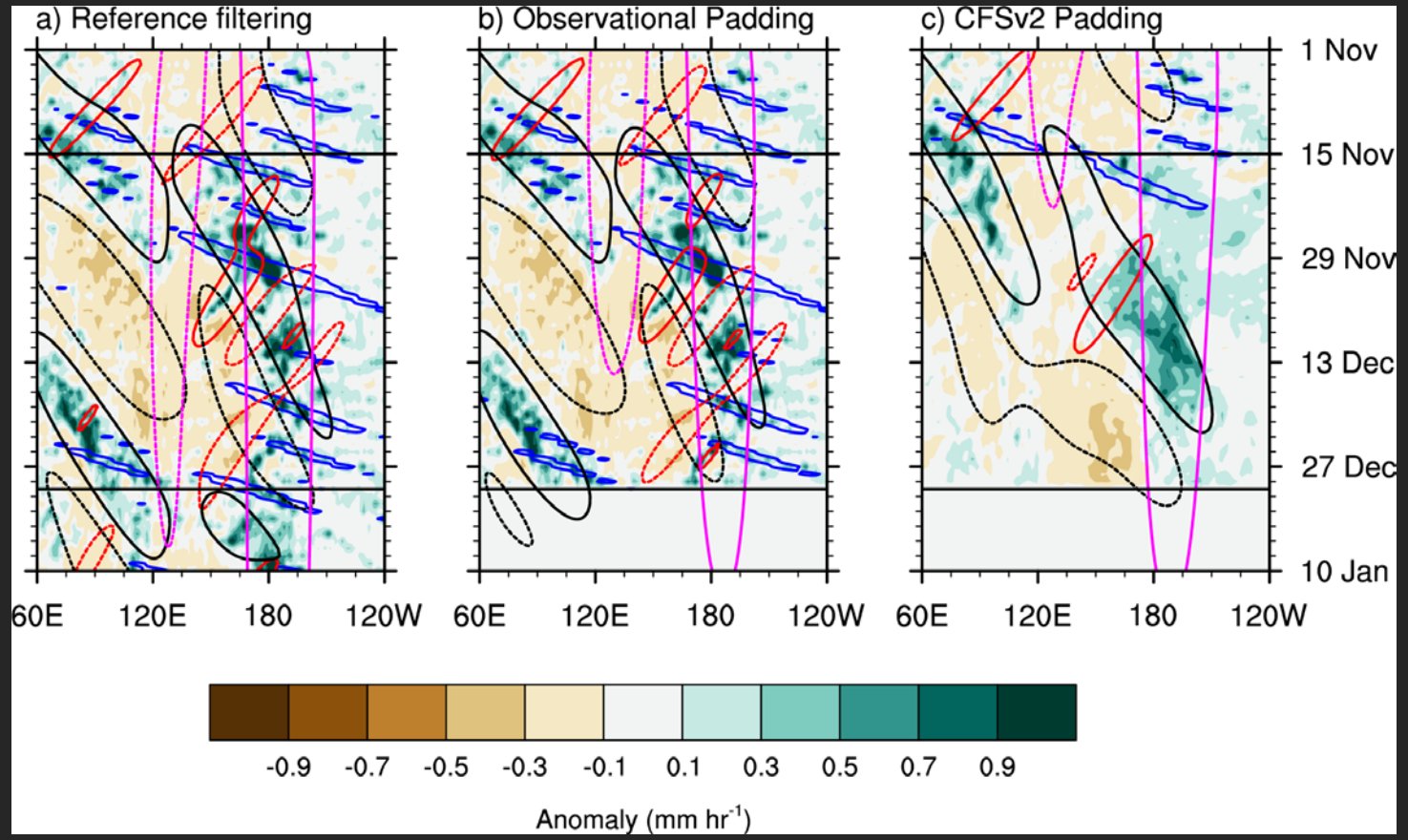
Filtering hindcasts can identify sources of skill (*and missed opportunities!*)

NCICS.org/mjo

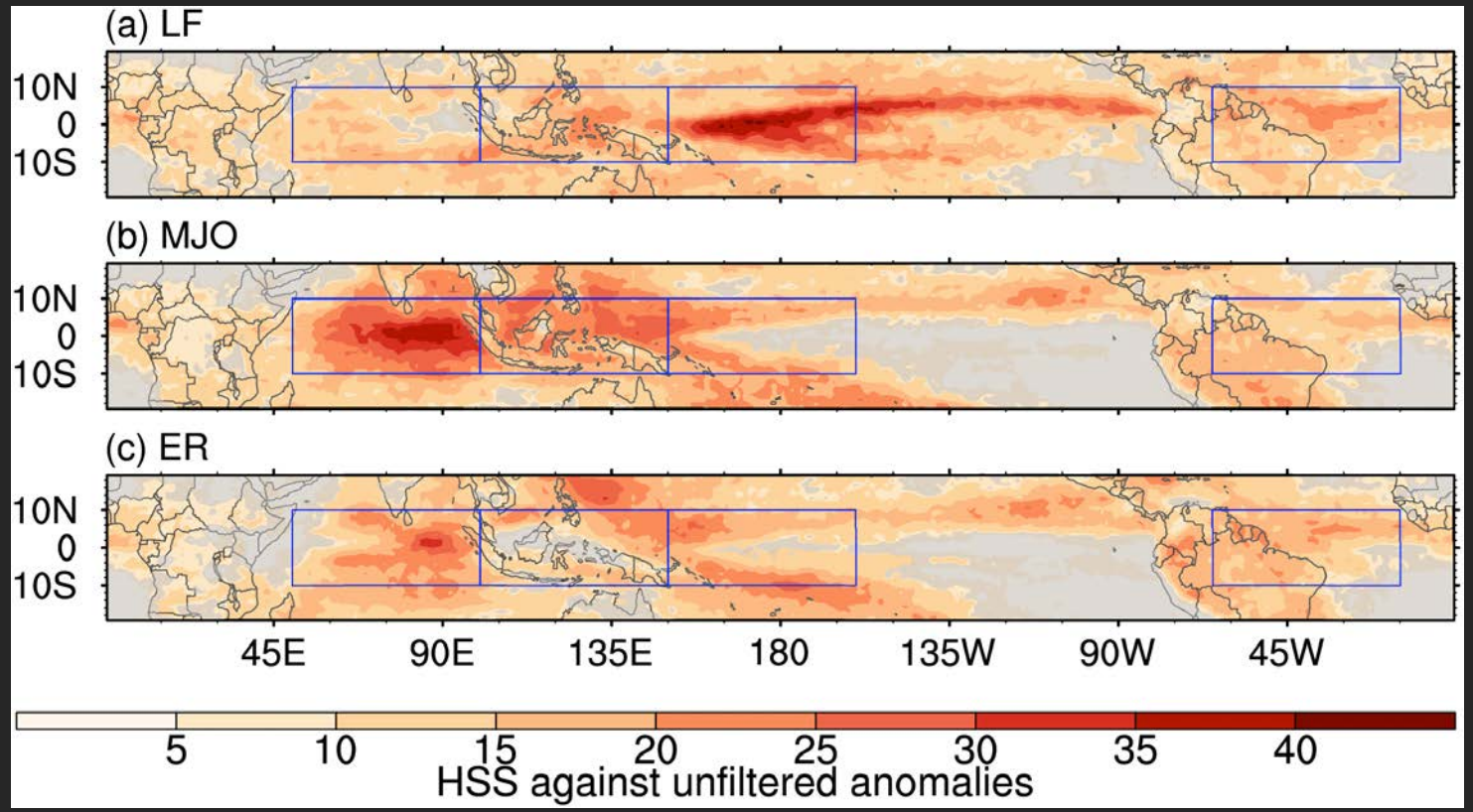


Verification Method

- CFSRR hindcasts from 1999–2010
- TRMM 3b42 multisatellite precipitation analyses
- Combining 1 year of 3b42 observations with 44 days of CFSv2 hindcasts
- 3-category Heidke skill scores for 20°S–20°N



HSS from Filtered Observations

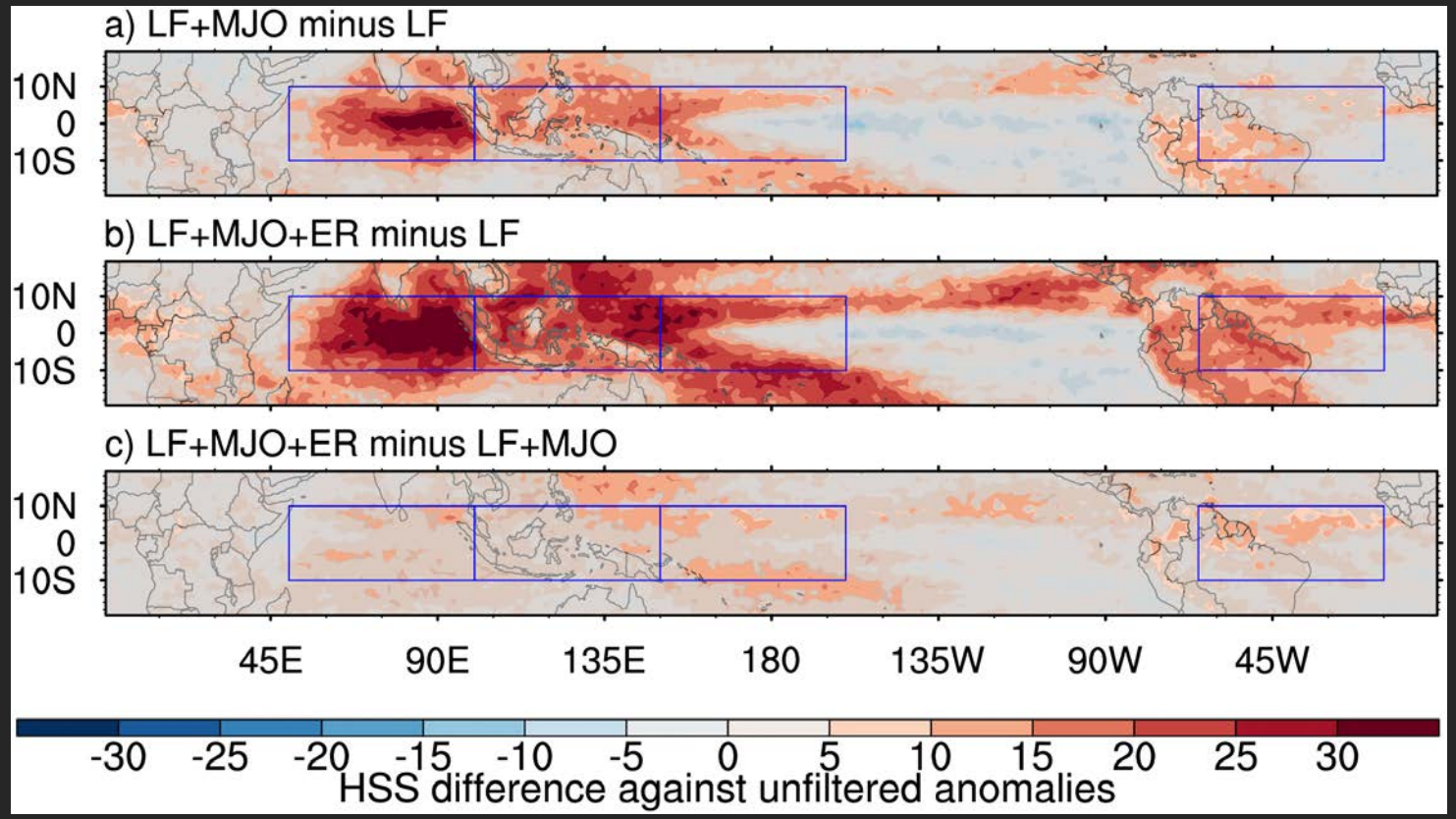


Week-3 HSS for filtered terciles relative to unfiltered

LF = Low-frequency (> 120 days)

MJO mainly adds skill over Indian Ocean and Maritime Continent

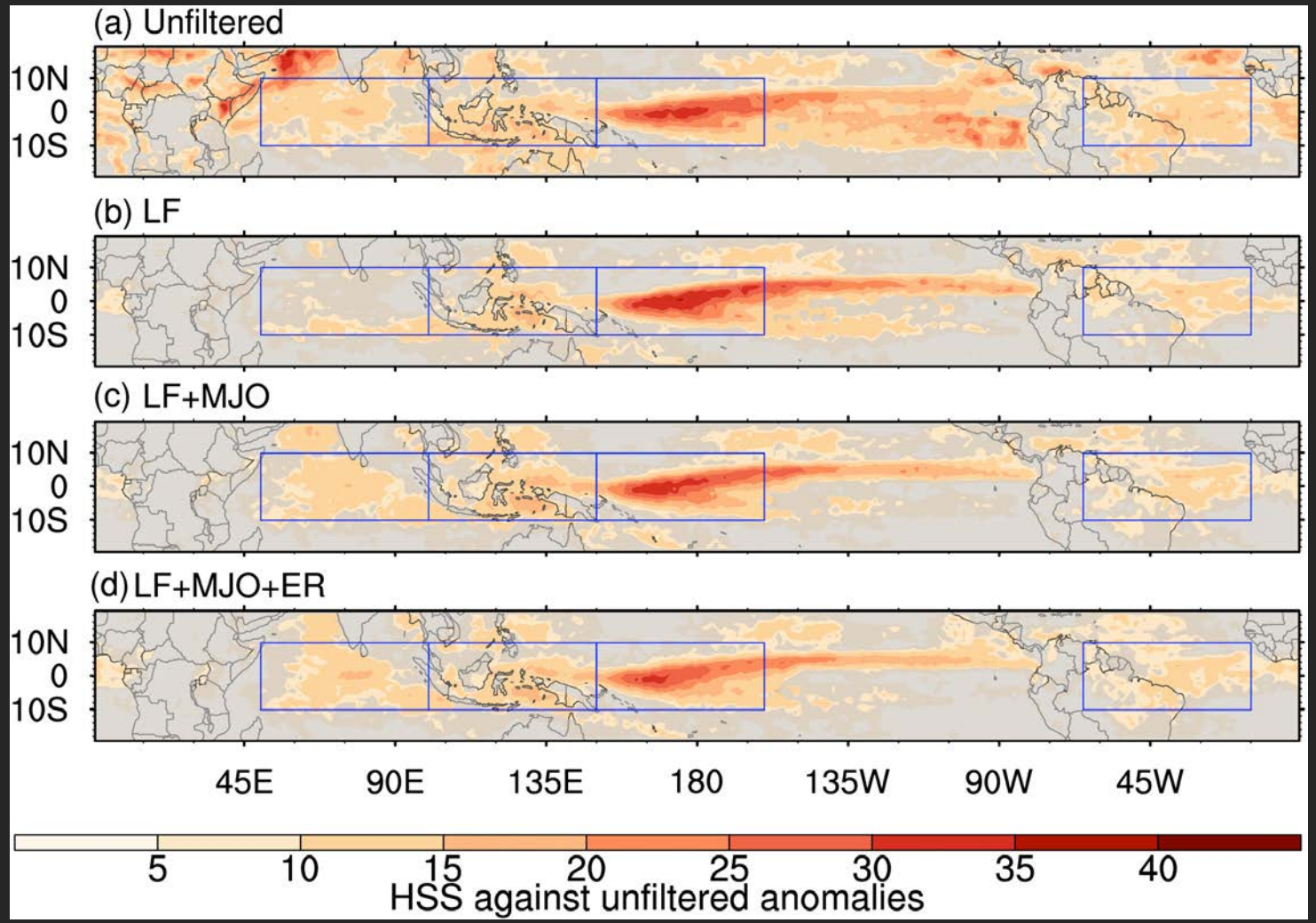
Impact of adding modes together



Difference in HSS between combinations of modes

MJO mainly adds skill over Indian Ocean and Maritime Continent

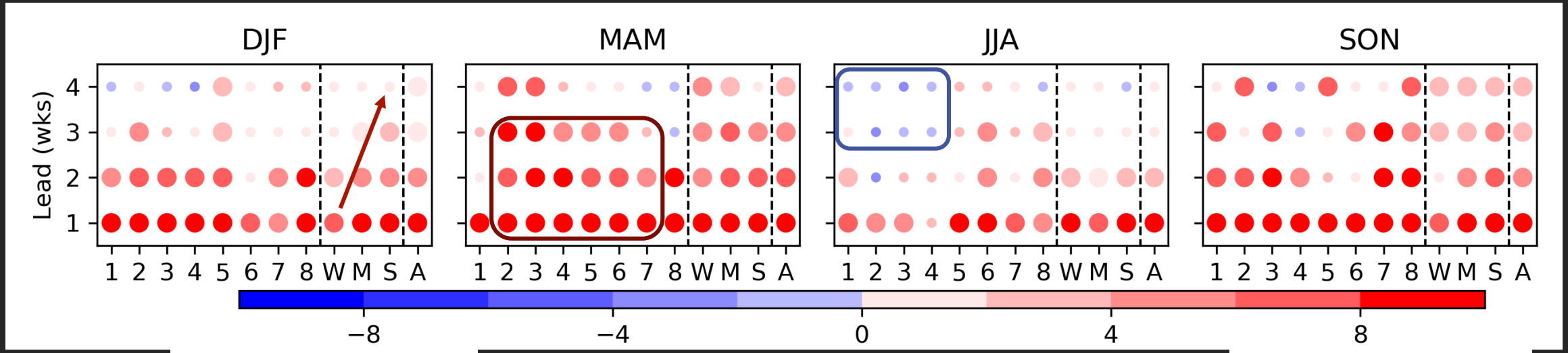
HSS for CFSv2



Week-3 HSS relative to unfiltered rainfall

Unfiltered and LF skill are almost the same

Indian Ocean Skill by MJO Phase and Season



LF+MJO HSS minus LF HSS

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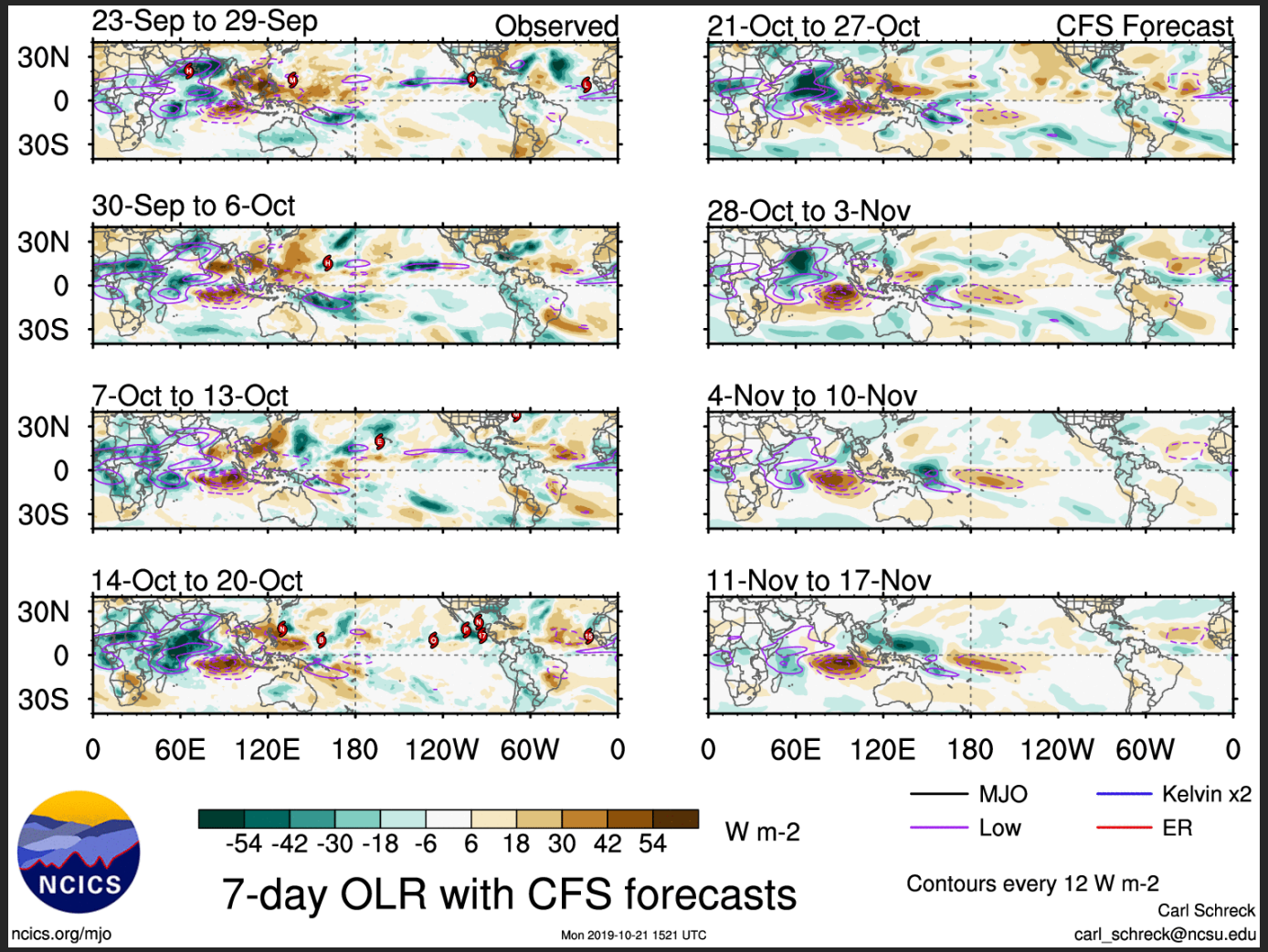

NCICS.org/mjo | Skill maps | Region/MJO phase/Season

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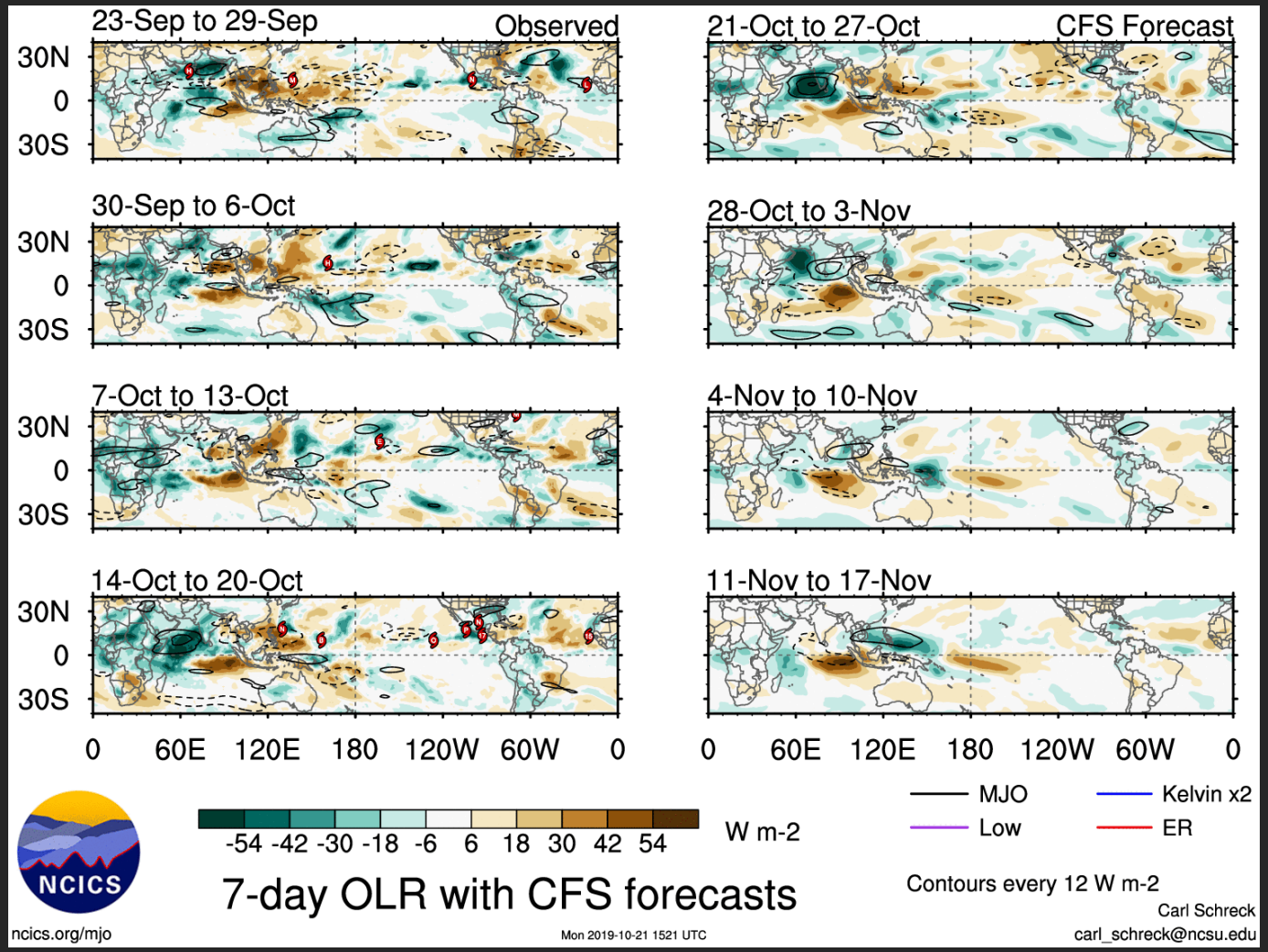

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