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# The Tibetan Plateau soil moisture Thermal controls on Asian Monsoon

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**Introduction**



**Work done**



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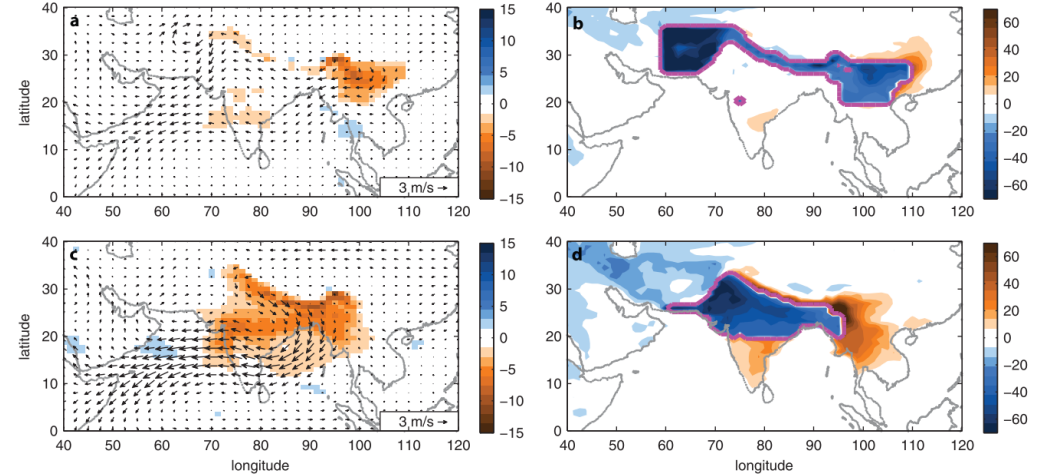
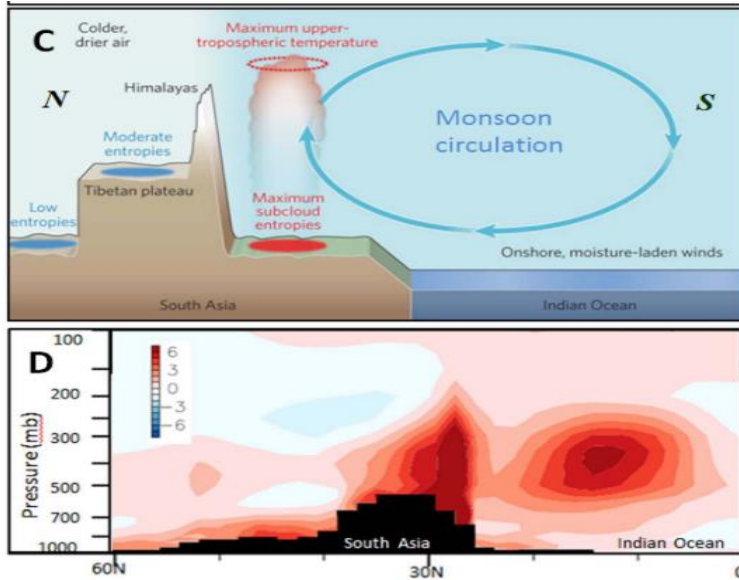
# Introduction



# Introduction



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- Mechanical insulation of the IP and TP has a minor influence on the generation of Asian monsoon.
- The thermal forcing of TP is an important factor in producing the ASM.



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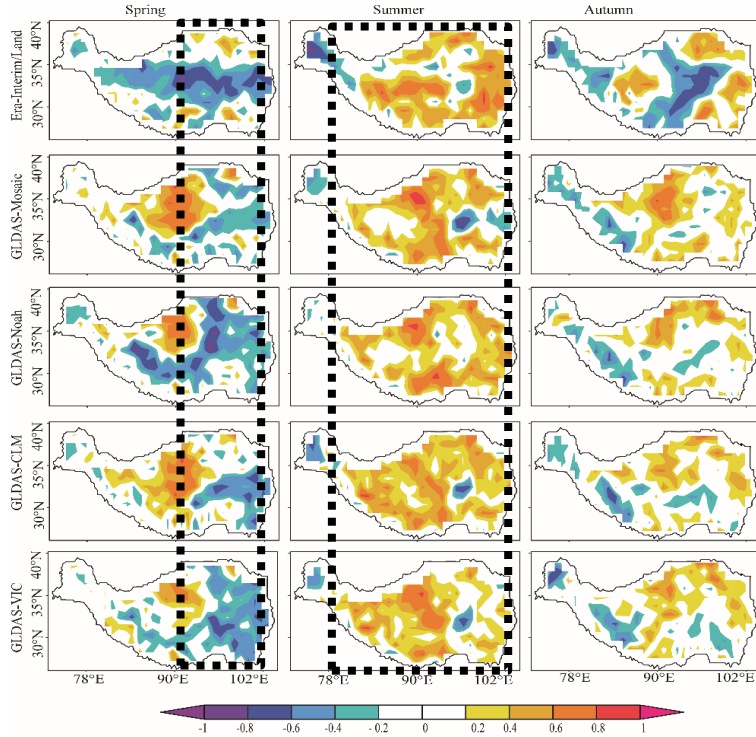


**Work done**

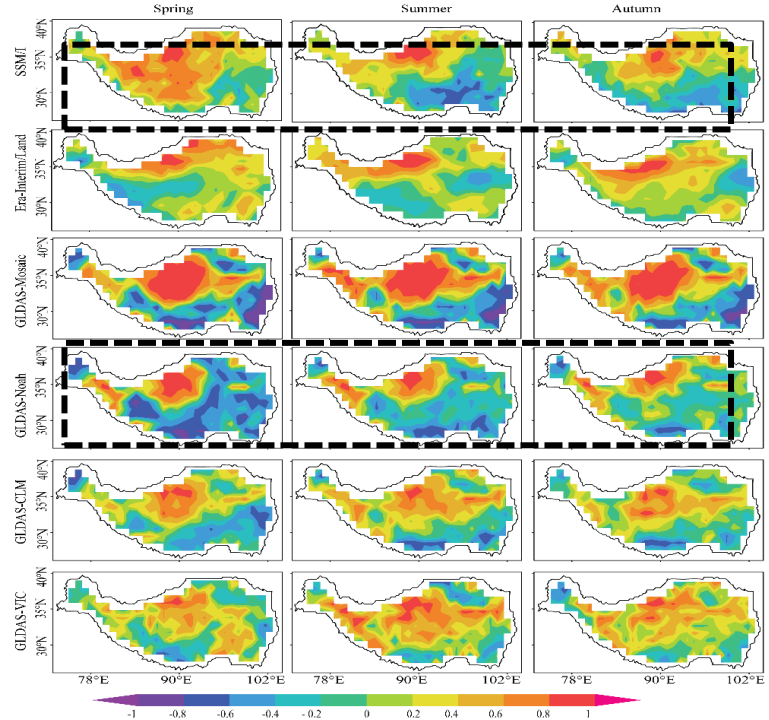


# TP-SM and South Asian monsoon

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Correlation for the interannual variations



Soil moisture ( $\text{m}^3.\text{m}^{-3}$ ) dipole

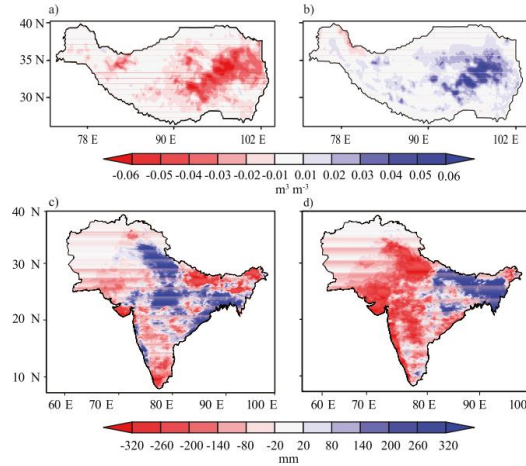
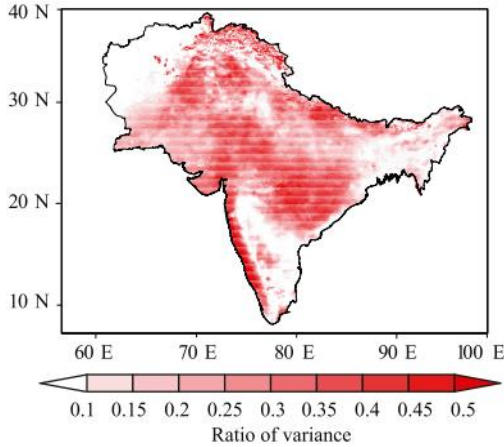
- Negative correlation exist during spring
- Warm season correlation is positive



# TP-SM and South Asian monsoon



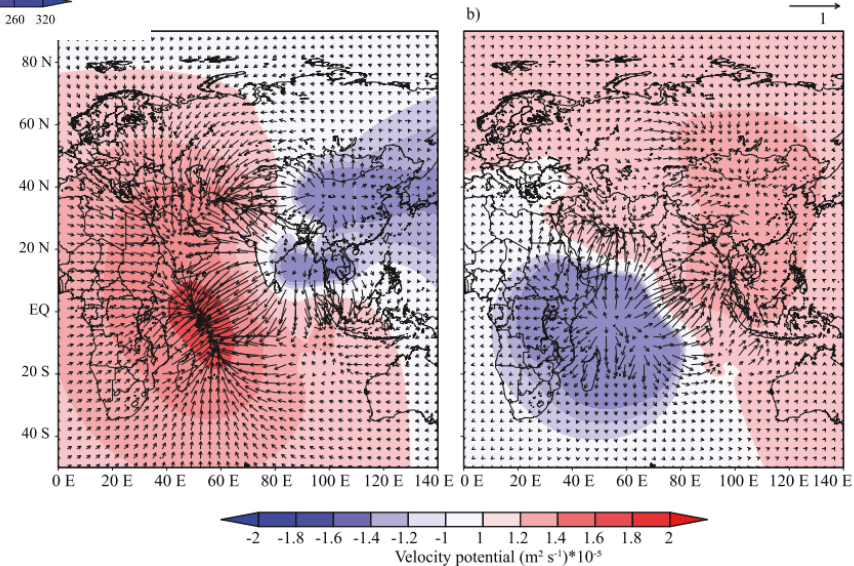
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## Variance ratio forced and composites

- Negative relationship between TP-SM and SA monsoon.
- SM control of the TP divergent ascent and regional precipitation variability over SA.

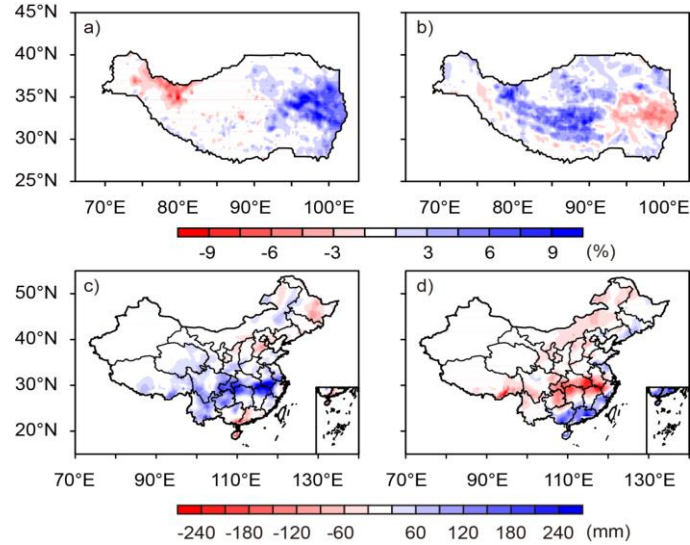
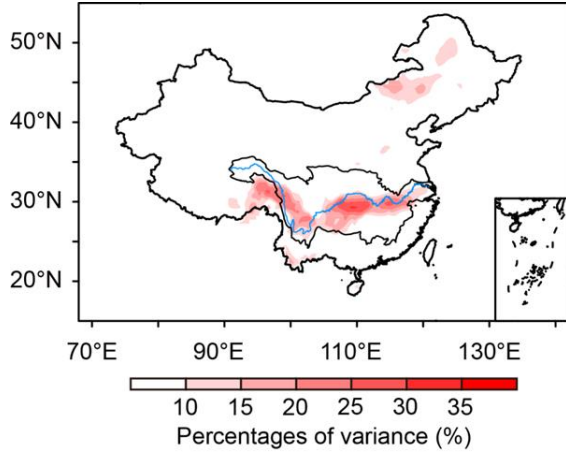
## Divergent circulations and velocity potential





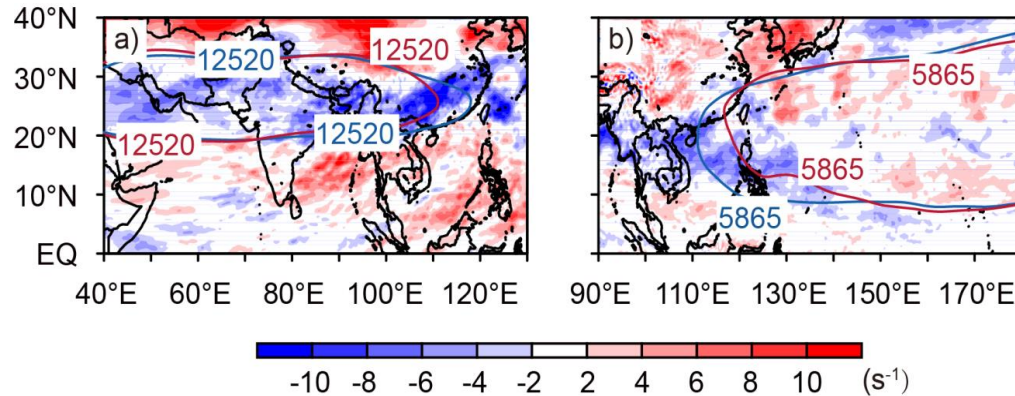
# TP-SM and East Asian monsoon

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## Variance ratio forced and composites

- TP-SM east-west dipole
- Positive relationship with floods.
- SAH and WPSH interactions







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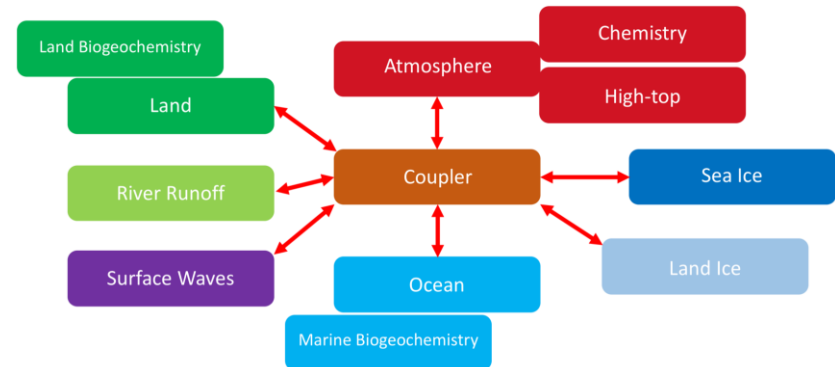
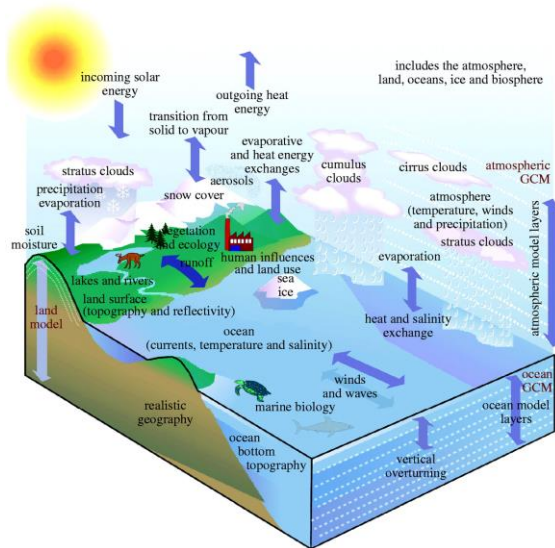
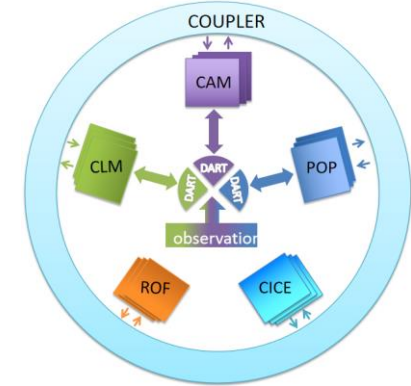
# Upcoming work



# Numerical simulations with CESM

## Numerical simulations to further explore the possible mechanism

- Run the Community Earth System Model
- Control and sensitivity experiments



Thank you