

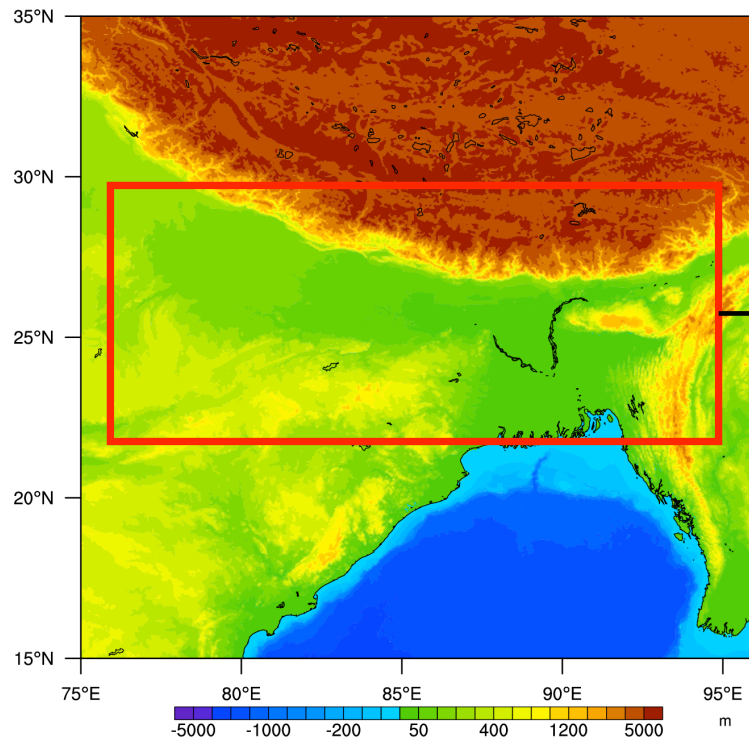
# Comparison of CHyM and MPI-HD models in prediction of hydrologic discharge of Ganges and Bramahputra Basins for 1998 flood event

*Deniz Bozkurt, Marco Otto, Shamsuddin Shahid*

# Outline

1. Study area (Ganges and Bramahputra Basins)
2. Climatology
3. CHyM and MPI-HD models
4. Model results
5. Conclusion

# Ganges and Bramahputra Basins



## *Ganges Basin*

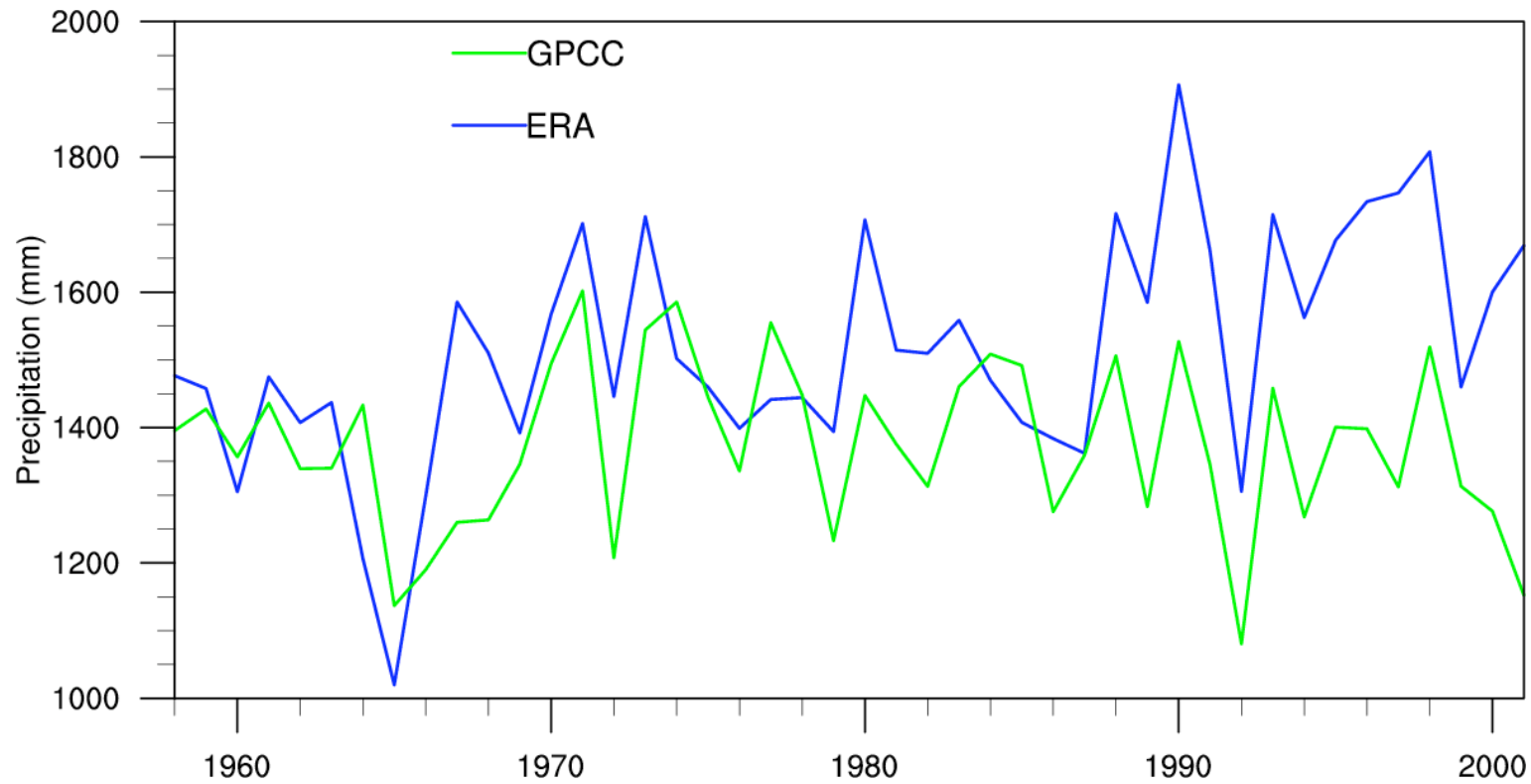
- World's largest delta
- 1,086,000 km<sup>2</sup>

## Brahmaputra Basin

- 580,000 km<sup>2</sup>

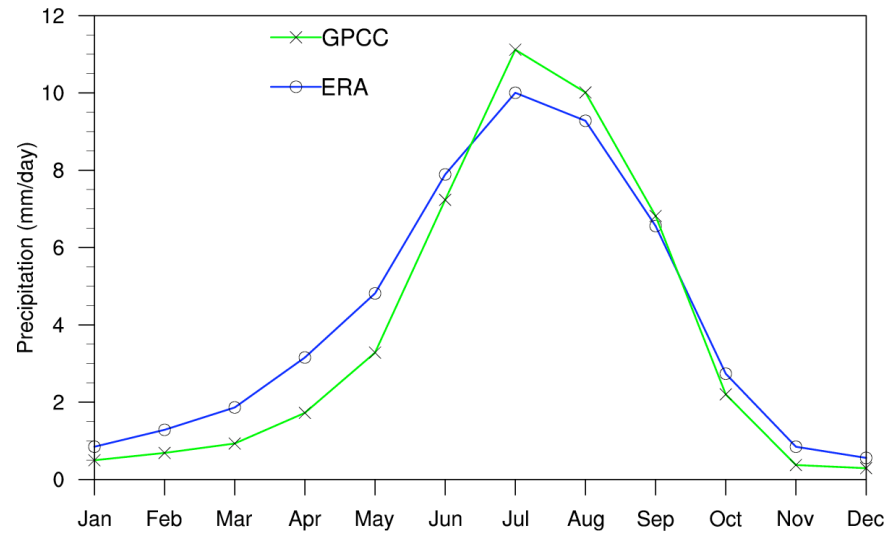
# Climatology

## Precipitation (mm) (1958-2001)

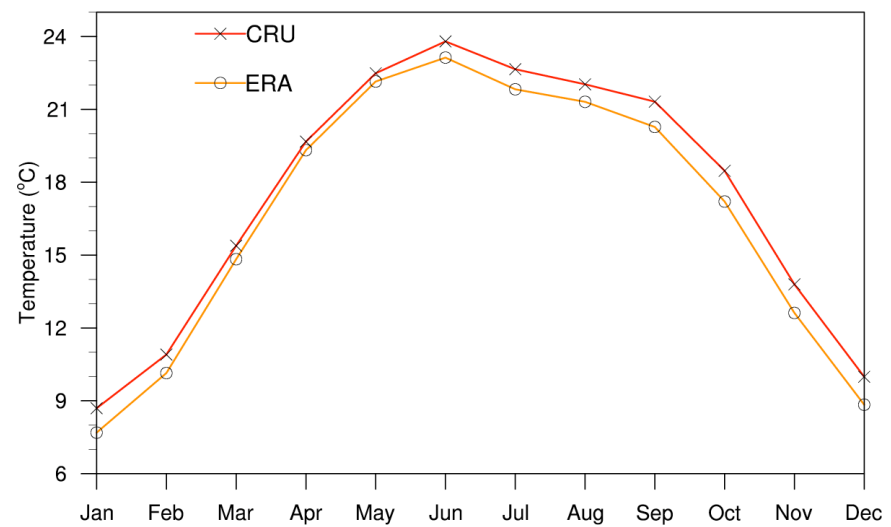


# Climatology

## Long-term monthly changes (1958-2001)



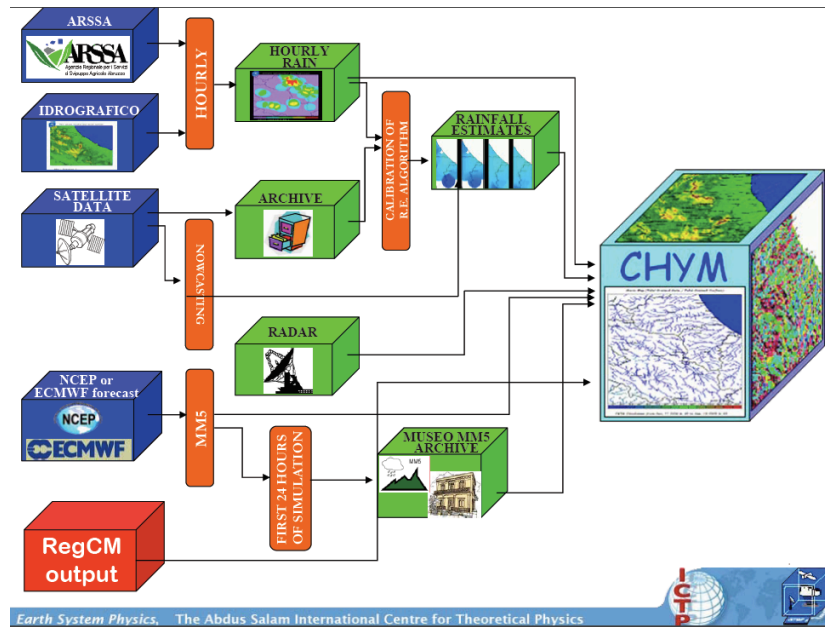
Precipitation (mm/day)



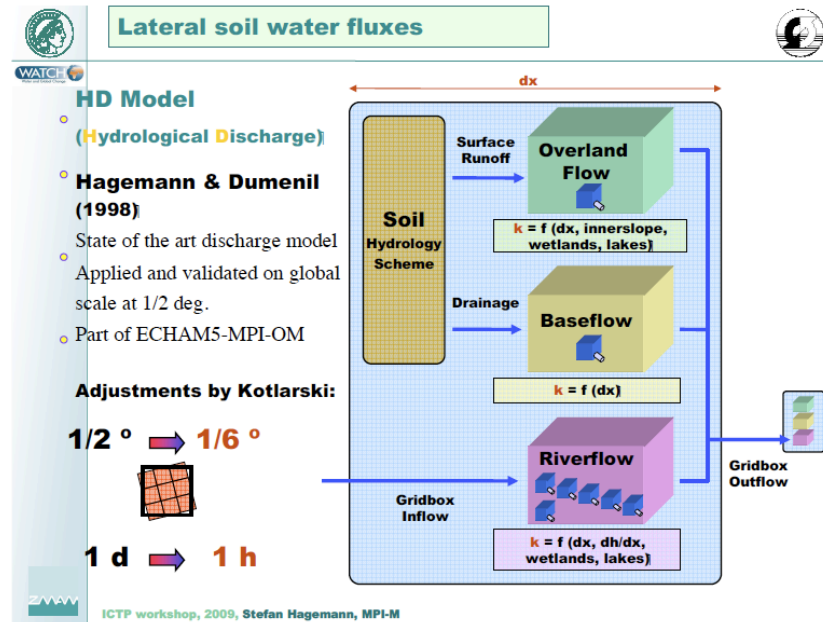
Temperature (°C)

# CHyM and MPI-HD models

## CHyM



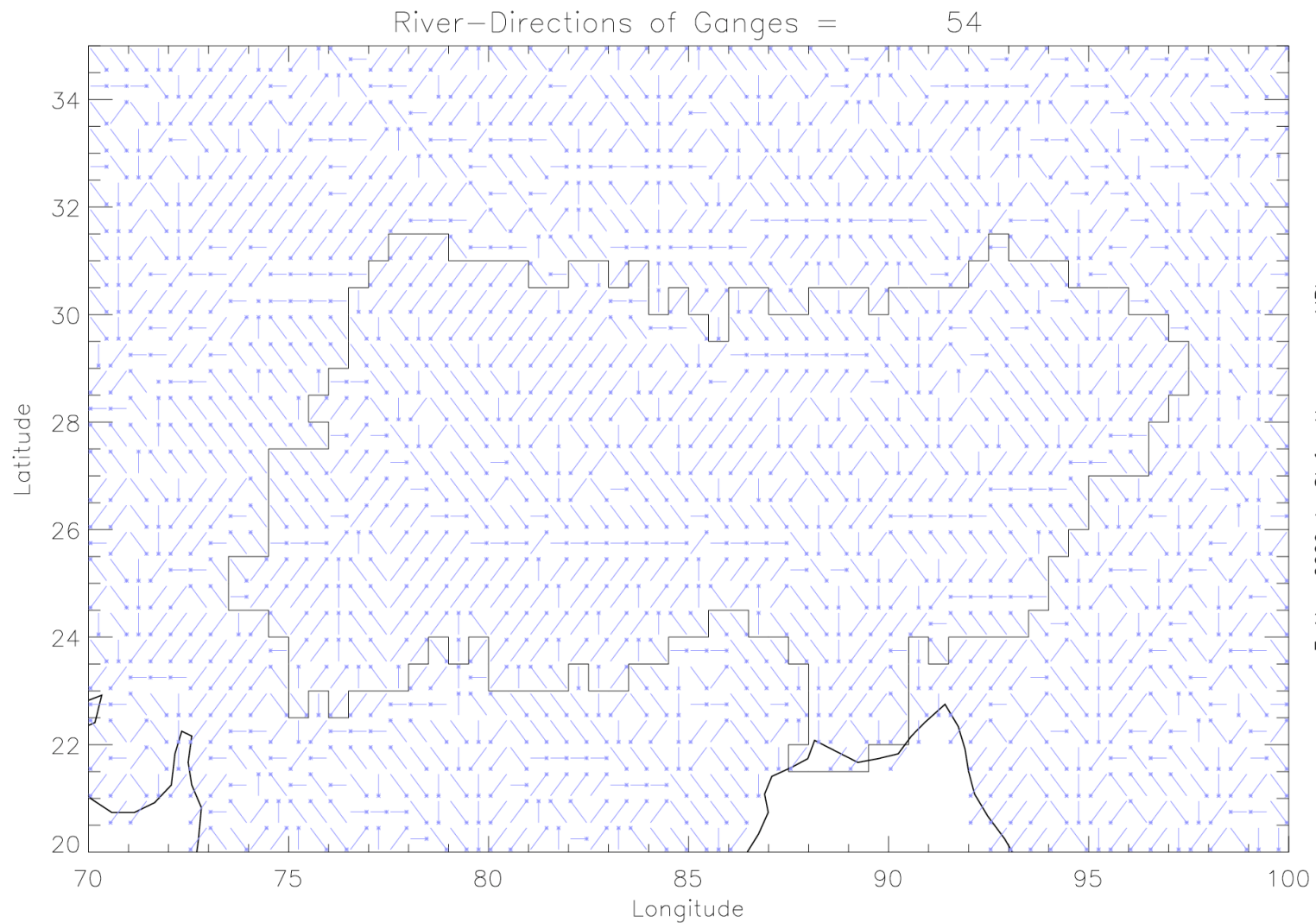
## MPI-HD



# Model results

MPI-HD

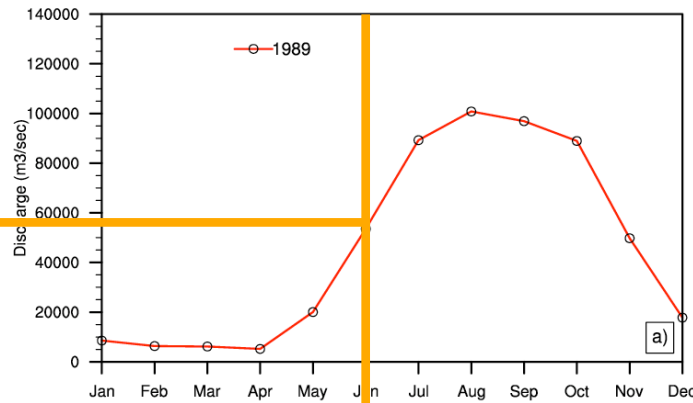
River directions of Ganges and Bramahputra Basins



# MPI-HD

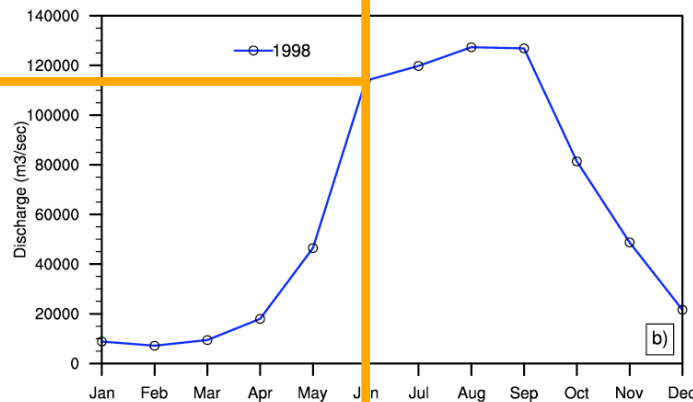
## Simulated discharge of Ganges and Bramahputra Basins

~60000 m<sup>3</sup>/sec



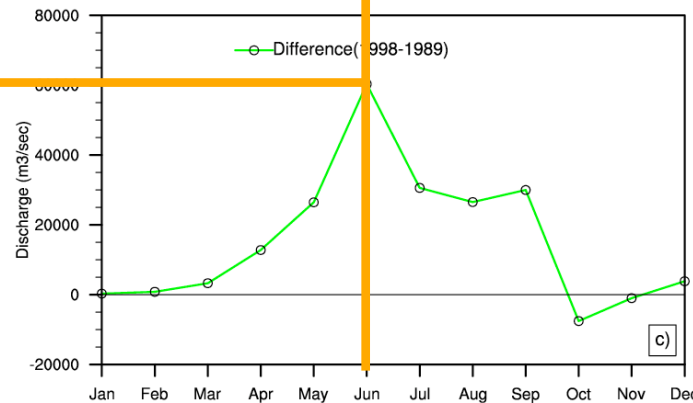
1989

~120000 m<sup>3</sup>/sec



1998 (Extreme flood event)

~60000 m<sup>3</sup>/sec

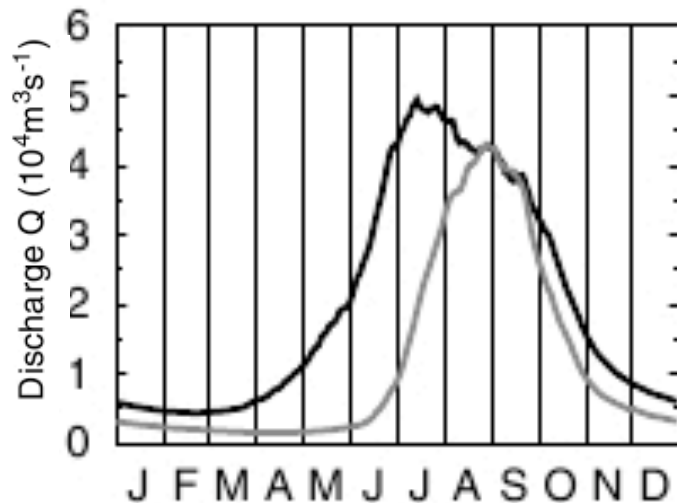
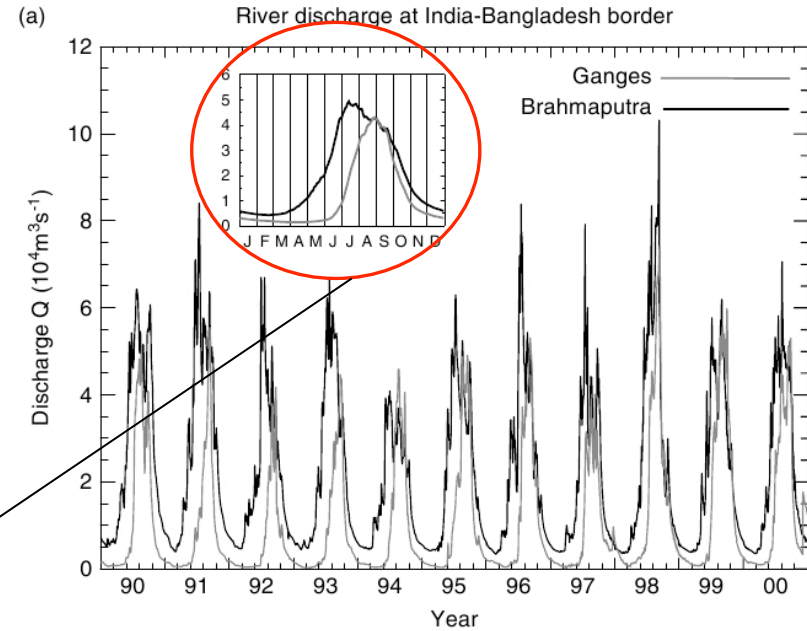
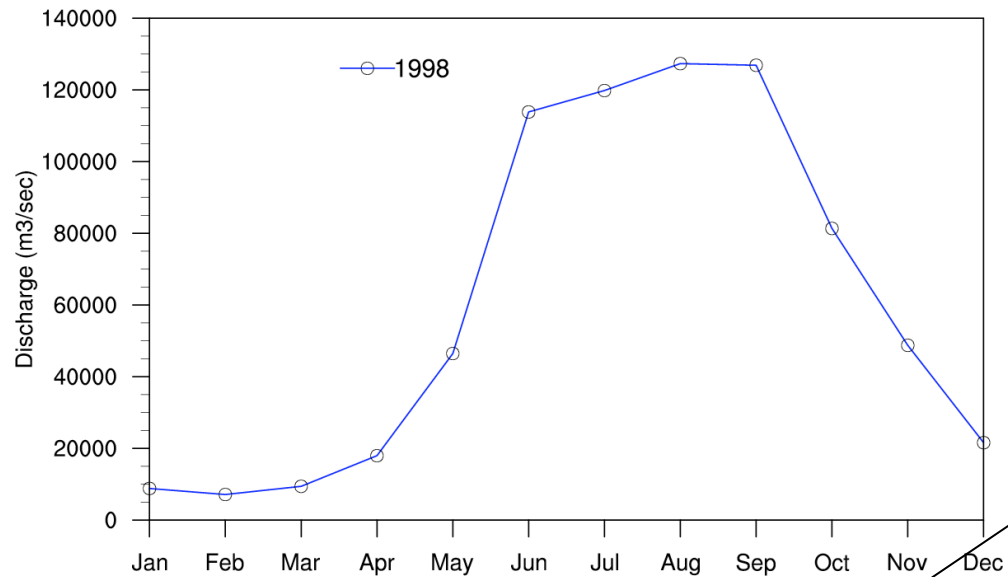


Difference (1998-1989)



# MPI-HD

## Simulated discharge of Ganges and Bramahputra Basins

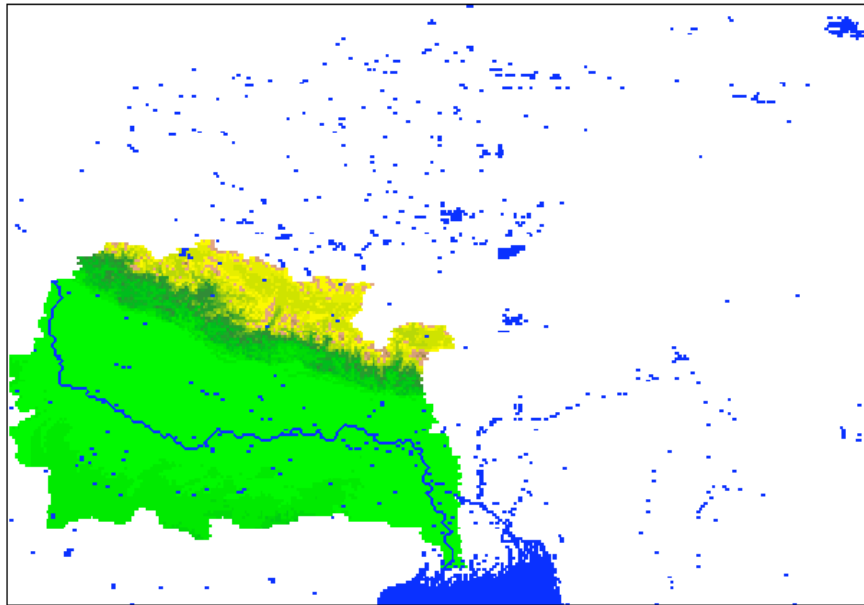


The discharges of the Brahmaputra (black) and the Ganges (grey) Rivers retrieved from Bahadurabad and Harding Bridge stations respectively, for 11-year period (1990–2000). Inset shows the mean annual cycle of discharge of both rivers calculated over the entire length of the dataset (Jian et al., 2009)

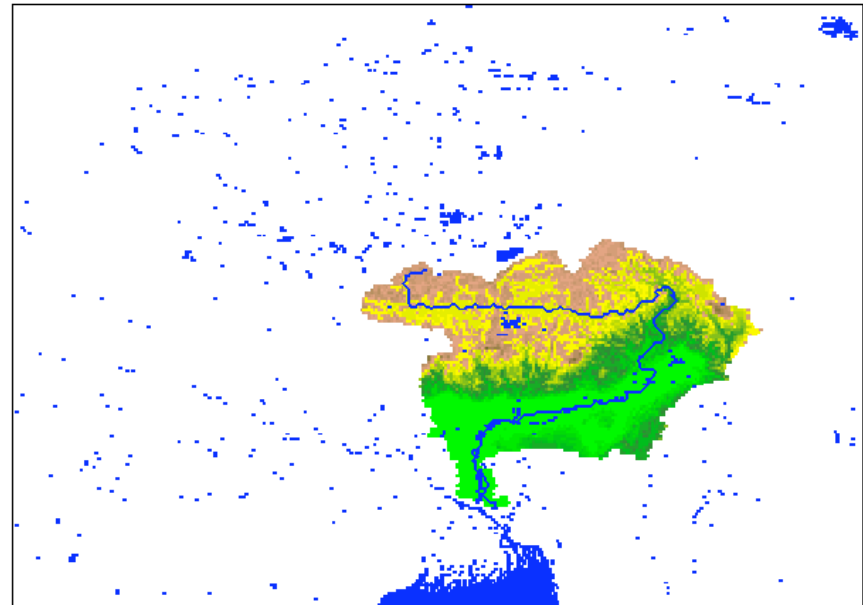
# Model results

CHyM

Ganges Basin



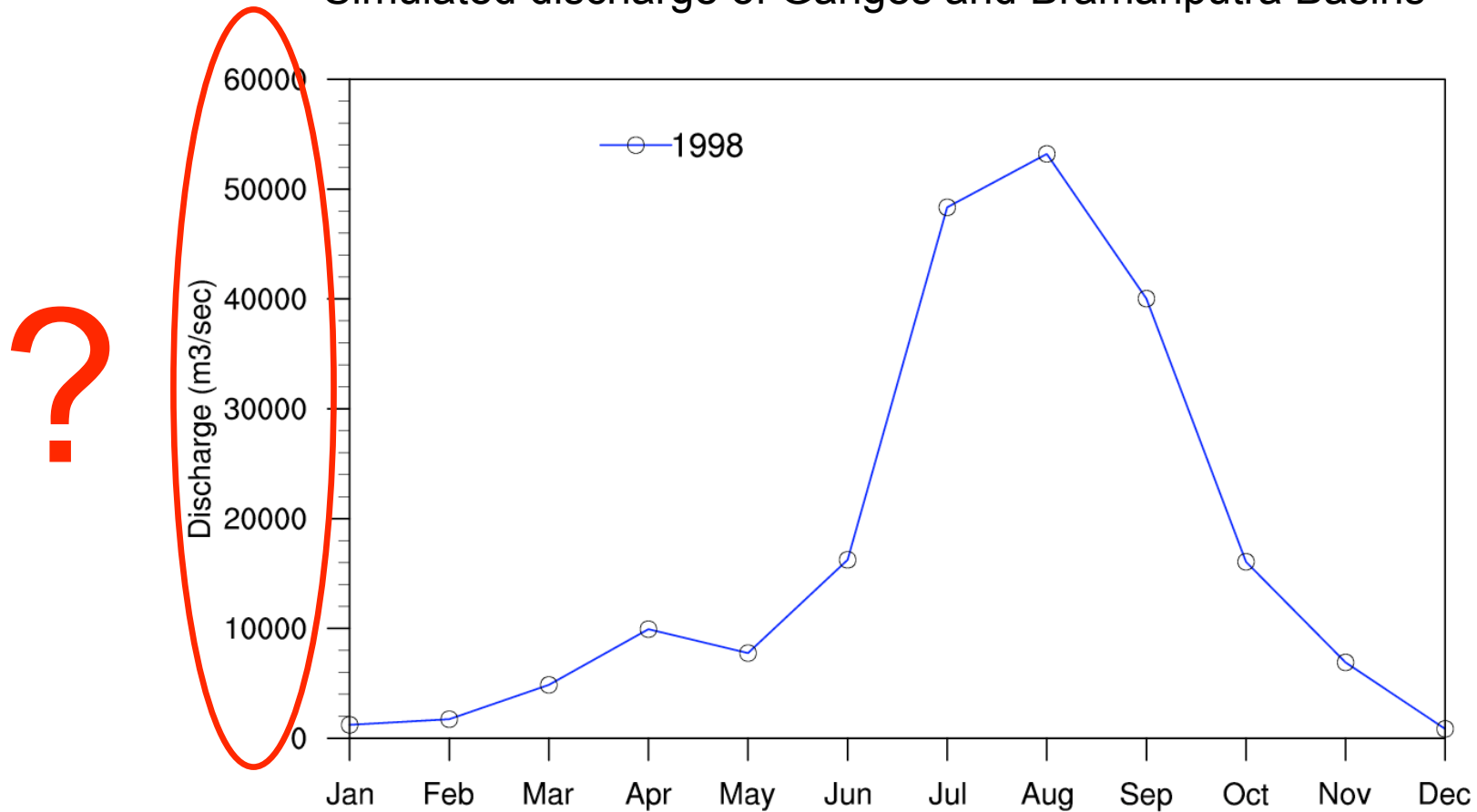
Brahmaputra Basin



# Model results

CHyM

Simulated discharge of Ganges and Bramahputra Basins



# Conclusion

Ei weiß,  
dass Ei nix  
weiß...



KITTIHAWK

# Acknowledgments

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Thank you for your attention...