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

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ICTP, Workshop on Water Resources in Developing countries, 2009
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 km²

Bramahputra Basin
- 580,000 km²
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

1989
~60000 m³/sec

1998 (Extreme flood event)
~120000 m³/sec

1998-1989
~60000 m³/sec

The discharges of the Brahmaputra (black) and the Ganges (grey) Rivers retrieved from Bahadurabad and Hardinge 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

Bramahputra Basin
Model results

CHyM

Simulated discharge of Ganges and Bramhputra Basins
Ei weiß, dass Ei nix weiß...
Acknowledgments

Stefan Hagemann

Erika Coppola

Laura Mariotti
Thank you for your attention…