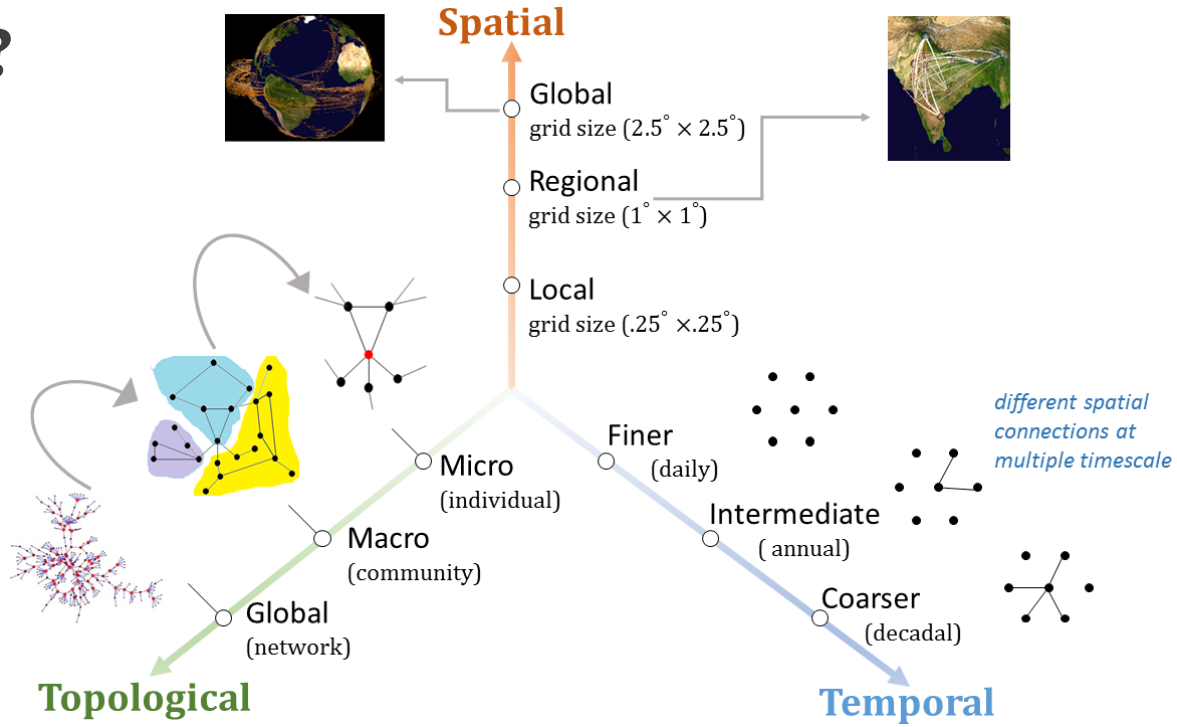
Decomposing Complexity WG 1.2

Science for Solutions decade 2023-2032 : HELPING Hydrology Engaging Local People IN one Global World

IAHS

Why focus on Decomposing Complexity?

- Climate (~Geo) processes involves interactions and feedback among processes at multiple temporal and spatial scales[1,2]
- The multiscale dynamics of climate processes are linked to extreme events (floods and droughts)[3]
- Studies linking the multiscale characteristics to extremes are scarce..



Source: Agarwal, A. (Universität Potsdam, 2019)

The overarching aim of the working group

1. Methodological advancement
2. Process understanding
3. Societal Relevance
4. Capacity building

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[1] Franzke, C. L. E. et al. Rev. of. Geophysics 58 (2020)
[2] Agarwal, A. et al. Sci Rep 9, 8808 (2019)
[3] Q. Schiermeier, Nature 560, 20 (2018).

We offer solutions for complex processes

Short term:

- Advance methodologies in the study of climate complexity.
- Develop tools and approaches to better understand and quantify multi-scale interactions in the climate system (for instance: Wavelets and complex network)

Long term:

- Enhance our understanding of climate processes.
- Deeper understanding of how different scales of climatic interactions impact weather patterns, extreme events, and long-term climate variations.

Societal relevance:

- Significant societal impact
- Open access: Tools and knowledge

Expected outcomes

- Bridging science and society
- Foster Collaborative research
- Generate Actionable knowledge (Methods/Community papers..)

International conferences

I. Roorkee Water Conclave (India, March 2024)
II. EGU (Austria, April 2024)
III. AOGS (Korea, June 2024)
IV. IAHS Scientific assembly (India, Oct 2025) and several others

Nat.& Int. Societies to be involved

I. AHI
II. IAH
III. YHS
IV. IWRS

Thank You

Scan here to sign up for this Working Group

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