

Schedule

Day Zero (Sun Sept 10): Late afternoon arrival

| | | |
|-------|---|-----------------------------------|
| 18:00 | Participant introductions Promises and challenges (presentation of advance questionnaire) | All All, M. Bassiouni, M. Höge |
|-------|---|-----------------------------------|

Day One (Mon Sept 11)

| | | |
|-----------|---|-----------------------|
| 8:00-8:15 | Coffee, Welcome & Discussion of Schedule (15) | H. Gupta, U. Ehret |
| 8:15-8:30 | Formation of synthesis groups | M. Bassiouni, M. Höge |
| 8:30-9:30 | Introductory Talk (45+15) | H. Gupta, U. Ehret |

Topical block I: Information Theory as a bridge

| | | |
|-------------|--|------------|
| 9:30-10:30 | Invited talk 1 (45+15) "Thermodynamic Overfitting: Limits on Complexity in Thermodynamic Learning" | A. Boyd |
| 10:30-11:30 | Invited talk 2 (45+15) "Epsilon Machines and Randomness, Structure and Complexity: Predicting Complex Systems" | A. Jurgens |
| 11:30-11:45 | --- Break --- (15) | |
| 11:45-12:30 | Plenum discussion (45) | |
| 12:30-14:00 | --- Lunch --- (90) | |

Topical block II: Data-based learning and modeling

| | | |
|-------------|---|----------------|
| 14:00-14:45 | Invited talk 3 (35+10) "Decoding the Information Bottleneck in Self-Supervised Learning: Pathway to Optimal Representations and Semantic Alignment" | R. Shwartz-Ziv |
| 14:45-15:30 | Invited talk 4 (35+10) "Probabilities are probably not enough" | A. Scheidegger |
| 15:30-16:15 | Invited talk 5 (35+10) "Minimum Description Length, E-Values and Evidence: a brief introduction" | P. Grünwald |
| 16:15-16:30 | --- Break --- (15) | |
| 16:30-17:30 | Plenum discussion (60) | All |
| 17:30-18:30 | Poster session I (60) | All |
| 18:30-19:30 | --- Dinner --- | |
| 20:00-21:30 | --- Socializing / Games / Free Discussion --- | |

Day Two (Tue Sept 12)

Topical block III: Modeling in the Geosciences

| | | |
|-------------|---|------------|
| 8:00-8:45 | Invited talk 6 (35+10) "Data Based Modeling at Scale" | G. Nearing |
| 8:45-9:30 | Invited talk 7 (35+10) "Machine learning and mechanistic modeling in hydrology: successes and ongoing challenges" | L. Condon |
| 9:30-10:15 | Invited talk 8 (35+10) "Information theory in ecological system modelling" | H. Metzler |
| 10:15-10:30 | --- Break --- (15) | |
| 10:30-11:30 | Plenum discussion (60) | All |

Topical block IV: Ways forward

| | | |
|-------------|--|----------------------------|
| 11:30-12:30 | Promises and challenges revisited (60) (identify forward-looking ideas for breakout groups) | All, M. Bassiouni, M. Höge |
| 12:30-14:00 | --- Lunch --- (90) | |
| 14:00-15:30 | Breakout groups | All |

| | | |
|-------------|---|-----|
| 15:30-16:30 | Poster session II (60) | All |
| 16:30-18:00 | Breakout group reports + discussion (90) | All |
| 18:00-18:30 | --- Break --- (30) | |
| 18:30-19:30 | --- Dinner --- | |
| 20:00-21:30 | --- Socializing / Games / Free Discussion --- | |

Day Three (Wed Sept 13)

Topical block V: Synthesis

| | | |
|-------------|---|------------------------------|
| 8:00-8:30 | Coffee (30) | |
| 8:30-10:00 | Synthesis group reports + discussion (90) | All, synthesis group members |
| 10:00-10:45 | Invited speaker reflections (45) | Invited speakers |
| 10:45-11:00 | --- Break --- (15) | |
| 11:00-12:30 | Plenum discussion and/or breakout groups (90) | All |
| 12:30-14:00 | --- Lunch --- (90) | |
| 14:00-16:30 | Guided tour to Schneeferner research facilities (2.5 h) | All |
| 16:30-17:30 | Conclusion / Outlook / Next steps (60) | All, H. Gupta, U. Ehret |
| 17:30-18:30 | --- Break --- (60) | |
| 18:30-19:30 | --- Dinner --- | |
| 20:00-21:30 | --- Socializing / Games / Free Discussion --- | |

Day Four (Thu Sept 14)

Morning departure