

## Recent developments for the advancement of hydrological modeling

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This talk will consist of three parts: In the first, I will pick up the major questions formulated in the session outline (theories to support hydrological model development, representation of emergent behavior, optimality principles and landscape structure in models, approaches for model evaluation and selection) and present and discuss recent examples for each. In the second part, I will reflect on what the consideration of the above desirables implies for the way we should structure and implement hydrological models. Finally, I will illustrate the latter point with examples from the CAOS model (a mesoscale hydrological model currently under construction in the framework of the Catchments As Organized Systems research group).