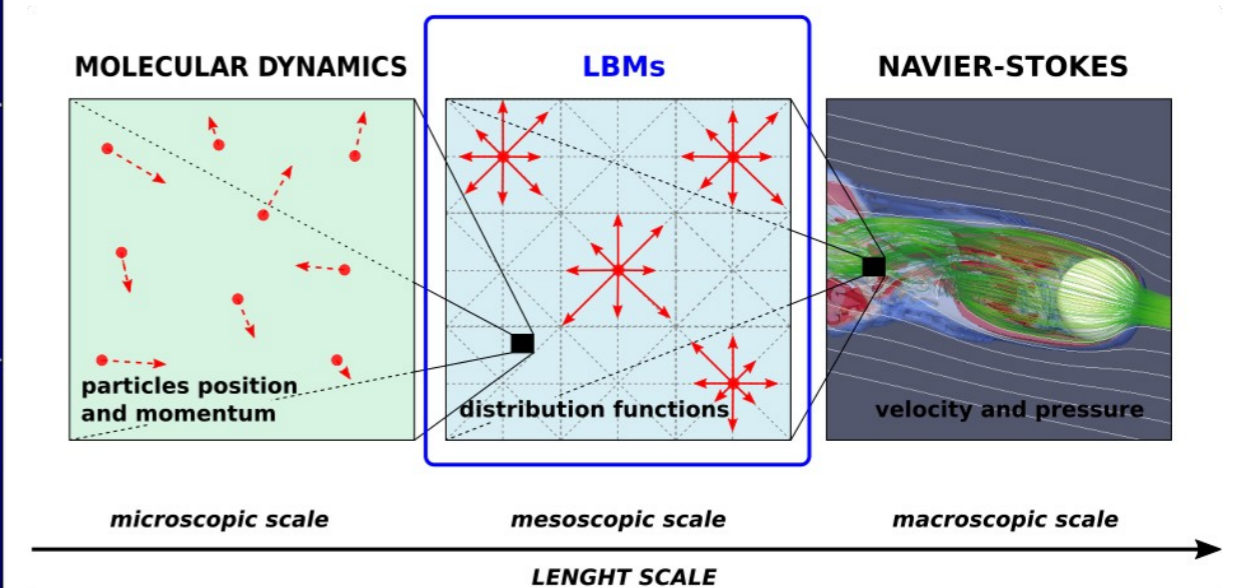
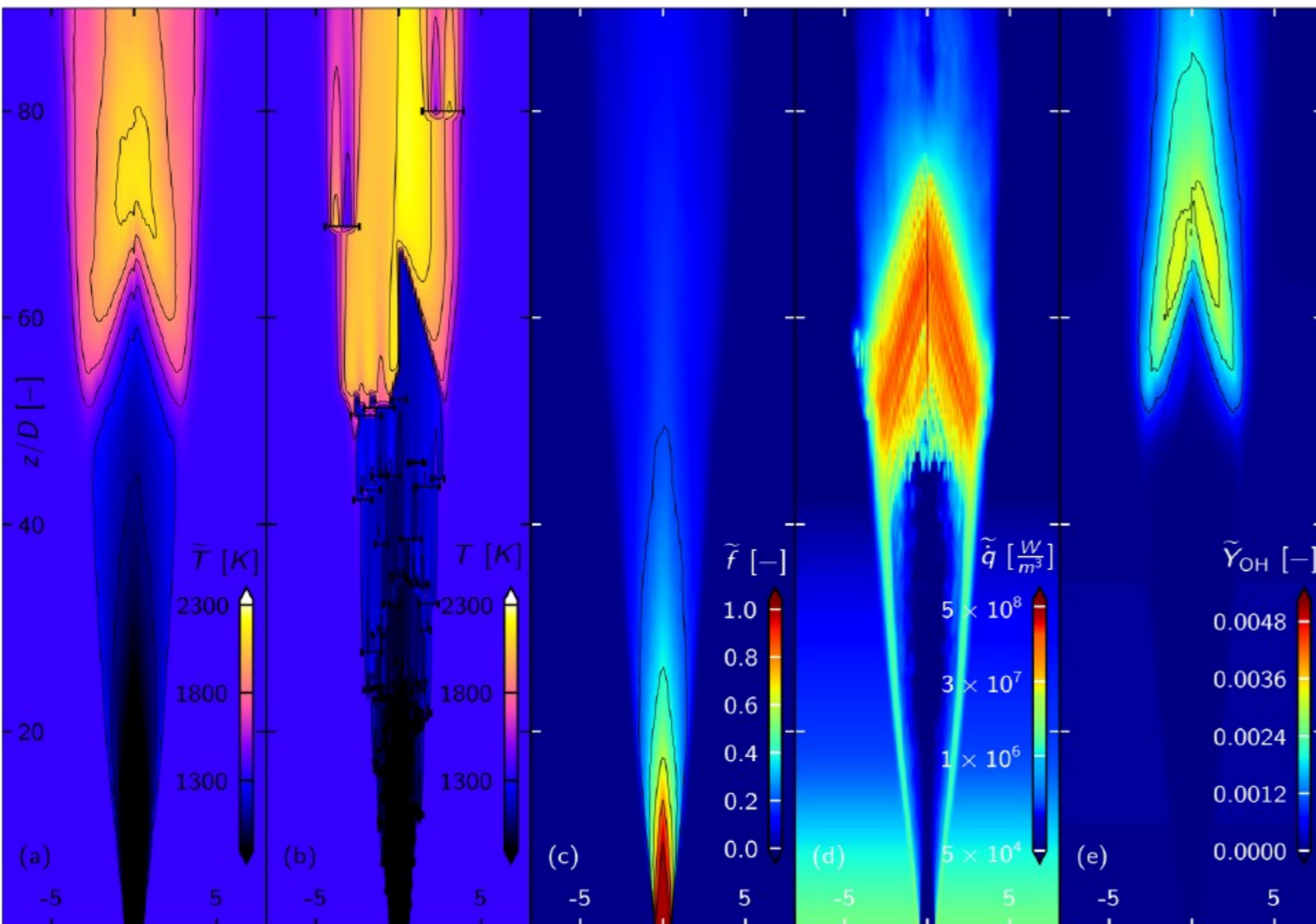


# SCIENTIFIC COMPUTING LAB (SCL)

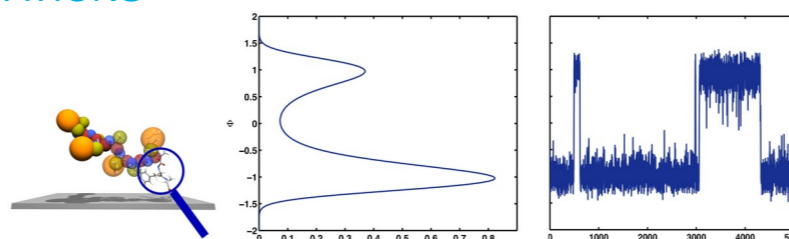


## KEY COMPETENCE AND FOCUS

- Development of numerical methods and algorithms for multi-energy systems
- Multiscale and multiphysics modeling and simulation of P2X technologies
- Stochastic simulation and efficient optimization of complex energy networks

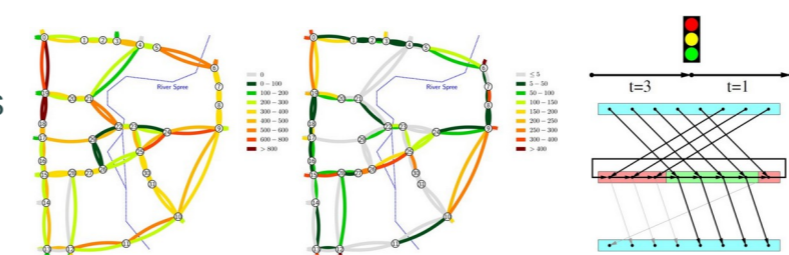
## CHAIR OF STOCHASTICS AND ITS APPLICATIONS

- Multiscale analysis of complex systems
- Stochastic control theory and simulation
- Kinetic modeling and simulation of catalytic processes for P2X



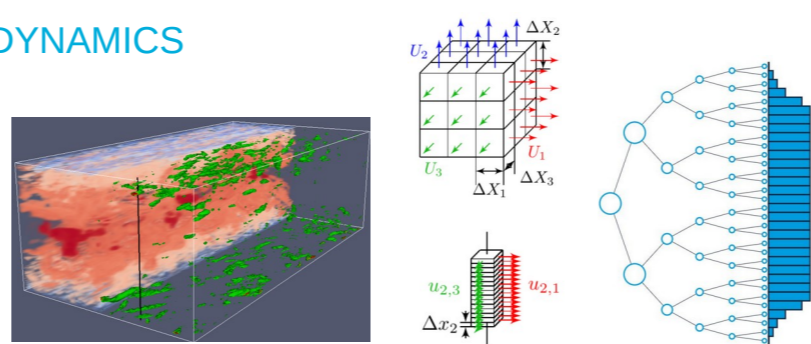
## CHAIR OF DISCRETE MATHEMATICS AND FOUNDATIONS OF COMPUTER SCIENCE

- Network flow optimization under constraints
- Algorithms for special graph classes
- Agent-based modeling of residential multi-energy systems



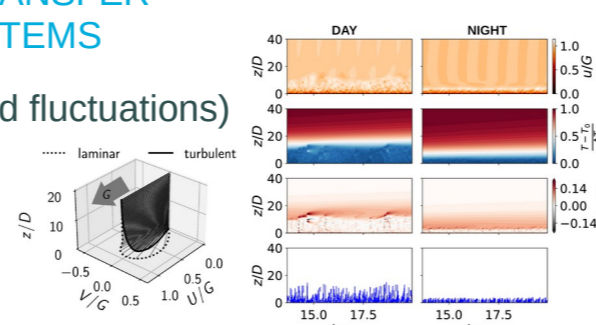
## CHAIR OF NUMERICAL FLUID AND GAS DYNAMICS

- Computational Fluid Dynamics (CFD)
- Stochastic turbulence modeling
- Chemically reactive flows
- Heat and mass transfer
- Multiphase flows in P2X applications
- Turbulent noise sources



## YIG ADVANCED MODELING AND SIMULATION OF TRANSFER PROCESSES FOR NEXT GENERATION ENERGY SYSTEMS

- Stochastic simulation of highly volatile renewables (wind fluctuations)
- Transfer processes in heat pumps and catalytic reactors for P2X applications



## HOW TO GET INVOLVED?

- Courses in numerics, programming, machine learning, and CFD
- Study Project; Bachelor, Master, PhD Thesis
- Student Assistant

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