Call for Papers

Simulation-based analysis and engineering techniques are traditionally a research focus of Clausthal University of Technology and University of Göttingen, which is especially reflected in their common interdisciplinary research cluster “Simulation Science Center Clausthal-Göttingen”. The third “Clausthal-Göttingen International Workshop on Simulation Science” aims to bring together researchers and practitioners from both industry and academia to report on the latest advances on simulation science. Artificial Intelligence is a powerful tool that in many cases allows more rapid and more efficient evaluation and prediction of research data compared to conventional methods. However, the predictive power of artificial intelligence depends on the availability of large data sets. Therefore, there are various scenarios in different disciplines including natural science, materials engineering, economy and social sciences in which simulations are needed. The workshop therefore focuses on both simulations and AI and their interaction.

Topics of Interest

The workshop considers the broad area of AI and simulation with a focus on (but not restricted to):

Material science and engineering (MSE)
Development and applications of computational techniques in material simulation (simulation at micro atomistic, meso and macro (continuum) scales including scale bridging; diffusive, convective transport and chemical processes in materials; simulation of granular matter), Machine Learning (ML) in MSE (properties/microstructure prediction; ML in atomistic simulations; ML on continuum simulations; materials discovery)

Socio-technical systems
Simulation of human-machine interaction (trust dimensions for human-machine hand-in-hand collaboration; validation and verification for self-adapting systems; real-time models and anticipation of human behavior in team collaboration; decentralized scheduling under complex real-world constraints; fairness and trust among heterogeneous user preferences), opinion dynamics, multi-agent systems, agent-based models, interactive simulation

Optimization of networks
Public and transportation networks, computer and sensor networks, queueing networks, Internet of Things (IoT) environments, electrical power grids, simulation of uncertain optimization problems, simulation of complex stochastic systems, simulation and optimization of productions and logistic systems / digital twins, process mining

Extended Abstract & Paper Submission

Authors are invited to submit extended abstracts (2 pages) via the submission system on the webpage. Accepted abstracts are scheduled at the workshop.

Deadline: December 9, 2024
Notification of Acceptance: February 24, 2025

All accepted abstracts are scheduled for presentation at the workshop. Authors of accepted abstracts are invited to submit full papers for the post-proceedings. Accepted post-proceedings will be published by **Springer’s CCIS series**. The deadline will be afterwards in July 2025.

Organization

Joint Organizing Committee:

- Nina Merkert (Clausthal, Germany)
- Robert Bredereck (Clausthal, Germany)
- Gunther Brenner (Clausthal, Germany)
- Robert Mettin (Göttingen, Germany)

Finance Chair:

- Alexander Herzog, TU Clausthal

www.simscience2025.tu-clausthal.de

TU Clausthal
GEORG-AUGUST-UNIVERSITÄT GÖTTINGEN
SWZ Clausthal – Göttingen Simulation Science Center