

Invitation to lecture series „Simulation Sciences“

Wednesday, November 28th, 2018, SWZ room 324 (C9), TU Clausthal, 4:15 pm

Prof. Dr. Dr. h. c. Siegfried Schmauder
Institute for Materials Testing, Materials Science and
Strength of Materials
University of Stuttgart

will talk about

Multiscale Materials Modeling **New Developments with Special Emphasis on MD-** **Simulations**

Content of the lecture:

In this overview it will be shown how the first successful example of real multiscaling for metals was achieved.

Multiscale simulation in the present context comprises the involvement of all length scales from atomistics via micromechanical contributions to macroscopic materials behavior and further up to applications for components.

The main focus of the presentation will be put on new developments with special emphasis on MD-simulations and other methods involved and how they interact within the present approach. It will be shown that each method is superior on the respective length scale. Furthermore, the parameters which transport the relevant information from one length scale to the next one are decisive for the success of physically based multiscale simulations. While in the past different methods were tried to be combined into one simulation it is nowadays obvious in many fields of research that the only way to succeed in understanding the mechanical behavior of materials is to do sequential multiscale simulations in order to achieve physically based practical material solutions without adjustment to any experiment. This has opened the door to real virtual material design strategies.

In a final step it will be shown that the approach is not limited to metals but can be extended to other material classes and can be also applied for composites as well as to many aspects of material problems in modern technical applications where all disciplines meet, from physics to materials science and further on to engineering applications.

Guests are welcome.

Head office:
Building C9, Arnold-Sommerfeld-Straße 6
38678 Clausthal-Zellerfeld

alexander.herzog@tu-clausthal.de
Phone: +49 5323 72-29 66
Fax: +49 5323 72-23 04

The SWZ is a common interdisciplinary research facility in simulation science of



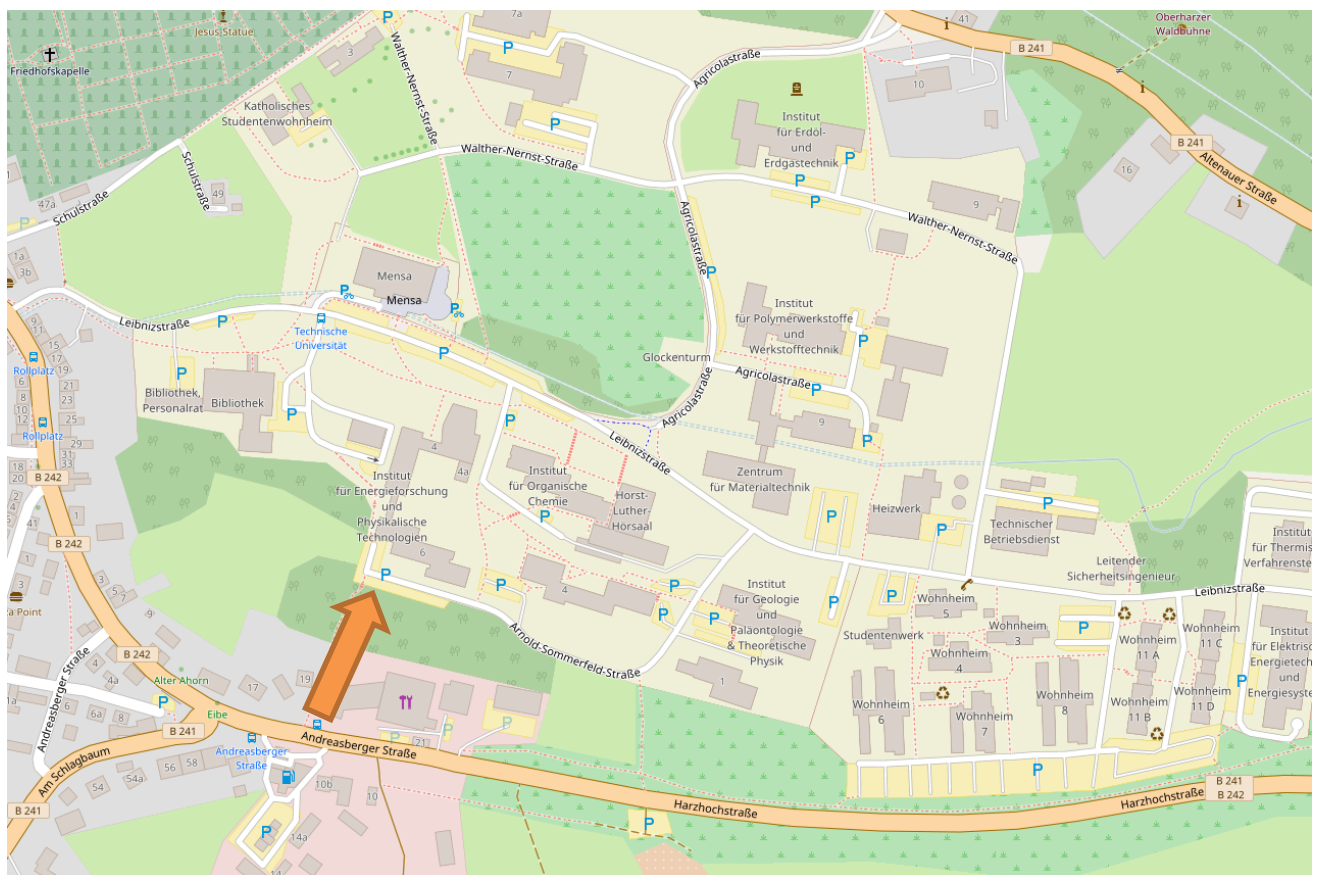
TU Clausthal



GEORG-AUGUST-UNIVERSITÄT
GÖTTINGEN

The lecture will be held in this building:

**Simulation Science Center Clausthal-Göttingen
Building C9, Room 324
Arnold-Sommerfeld-Straße 6
38678 Clausthal-Zellerfeld**



Navigation:
tu-c.de/c9

