

Einladung zur Ringvorlesung „Simulationswissenschaften“

Mittwoch, 5. Dezember 2018, SWZ-Seminarraum 324 (C9), TU Clausthal, 17:15 Uhr

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spricht über das Thema

Automatic Processing of Complex Geometries with the Lattice Boltzmann Method

Inhalt des Vortrags:

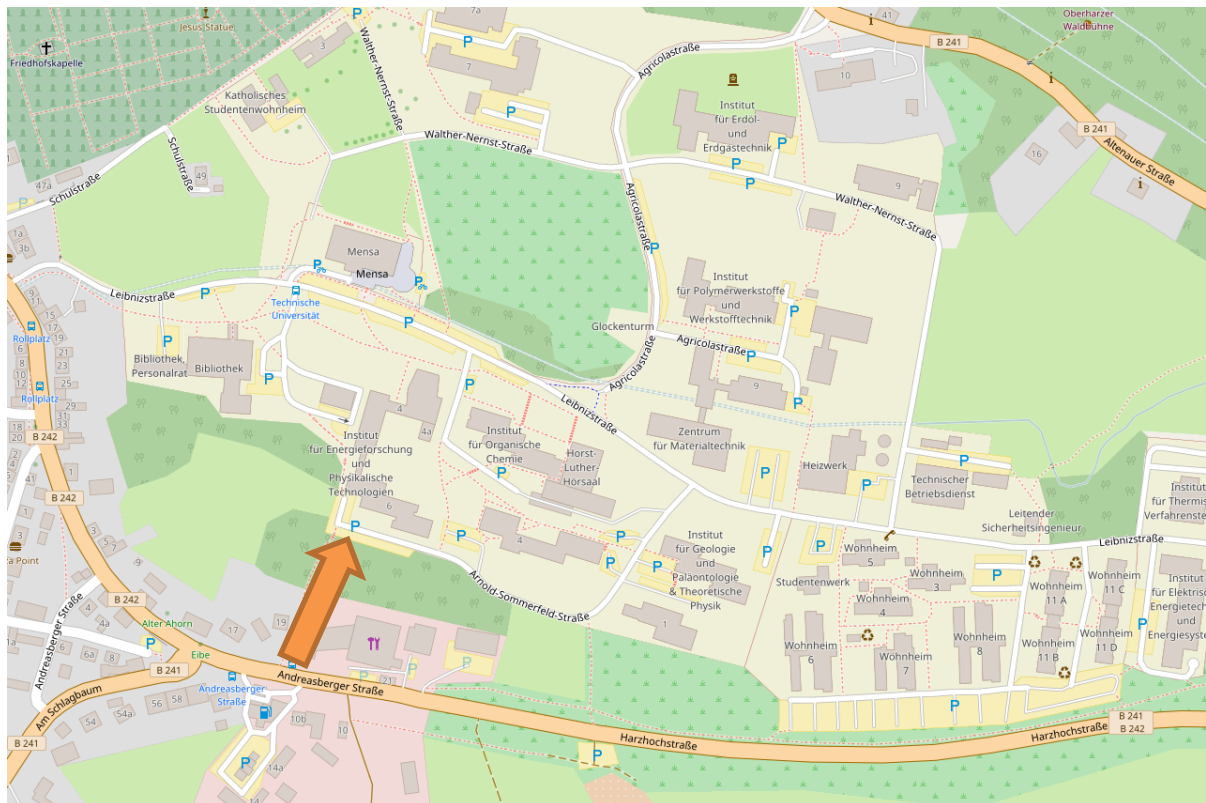
In order to determine correlations between fluid dynamic coefficients and geometrical properties a large number of data points, usually obtained in experiments and measurements, have to be examined. Applications may be found in aerodynamics, process engineering or other disciplines. For example, in porous media correlations between pressure loss or dispersion have to be parametrized depending on details of the geometrical structure. In biomedical applications, the flow through a large number of complex structures has to be analyzed in a reliable and accurate way. In this context, computational approaches may offer an alternative route to provide such data. However, in classical fluid dynamics the mesh generation often requires manual processing, limiting the number of analyzable geometries. In contrast the lattice Boltzmann method, which usually operates on Cartesian grids, allows for easy and fully automatic mesh generation. Accuracy may be enhanced by using hierarchical refined meshes. Using a fully automated simulation setup the number of generated data is only limited by computational power and available input data. This talk gives a short introduction to the idea and basic concepts of LBM and illustrates the fully automatic approach drawing on examples from process engineering and medicine.

Gäste sind herzlich willkommen.



Der Vortrag findet in folgendem Gebäude statt:

**Simulationswissenschaftliches Zentrum
Clausthal-Göttingen
Gebäude C9, Raum 324
Arnold-Sommerfeld-Straße 6
38678 Clausthal-Zellerfeld**



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