SWZ Clausthal – Göttingen
Simulationswissenschaftliches Zentrum

Einladung zur Ringvorlesung
„Simulationswissenschaften“

Freitag, 21. Juni 2024, Seminarraum 106a(T2), D5, TU Clausthal, 14:30 Uhr

Michael Schäfer, M. Sc. (Deutsches Zentrum für Luft- und Raumfahrt, Braunschweig)

spricht über das Thema

Model-based design and simulation-based validation of an actuation system for a morphing control surface

Inhalt des Vortrags:

A morphing wing profile can improve aircraft performance at almost every point of the flight envelope. In order to realize such adaptive variable camber, technologies are required that enable structural deformation of the wing profile. A major challenge in the development of morphing technologies is to enable both the flexibility for the shape-variable structure and to ensure the necessary stiffness. In contrast to the classic design approach to the design of control surfaces, where there is a clear separation between structure and system, these two domains are often combined in the case of morphing structures in order to achieve the desired functionality.

Even if the basic concept is similar, a wide variety of actuation concepts are used in research, for example classic actuators, shape memory alloys, piezoelectric actuators or cells deformed by means of a suitable fluid. During development, however, the focus is usually on the structure itself, while the actuation system is only marginally considered. Other important factors such as installation space, safety and certification aspects are often neglected in early development. Many new functions developed for aircraft undergo such a development process from the aerodynamic concept, through structural feasibility to integrability and certification. It is evident that many functionalities are revisited and further developed over decades until a new showstopper arises. The aim of the work is to show how the design of new morphing actuation systems for safety-critical functions in aircraft can be supported using model-based methods, addressing key aspects such as safety and certification at an early stage of development.

Gäste sind herzlich willkommen.

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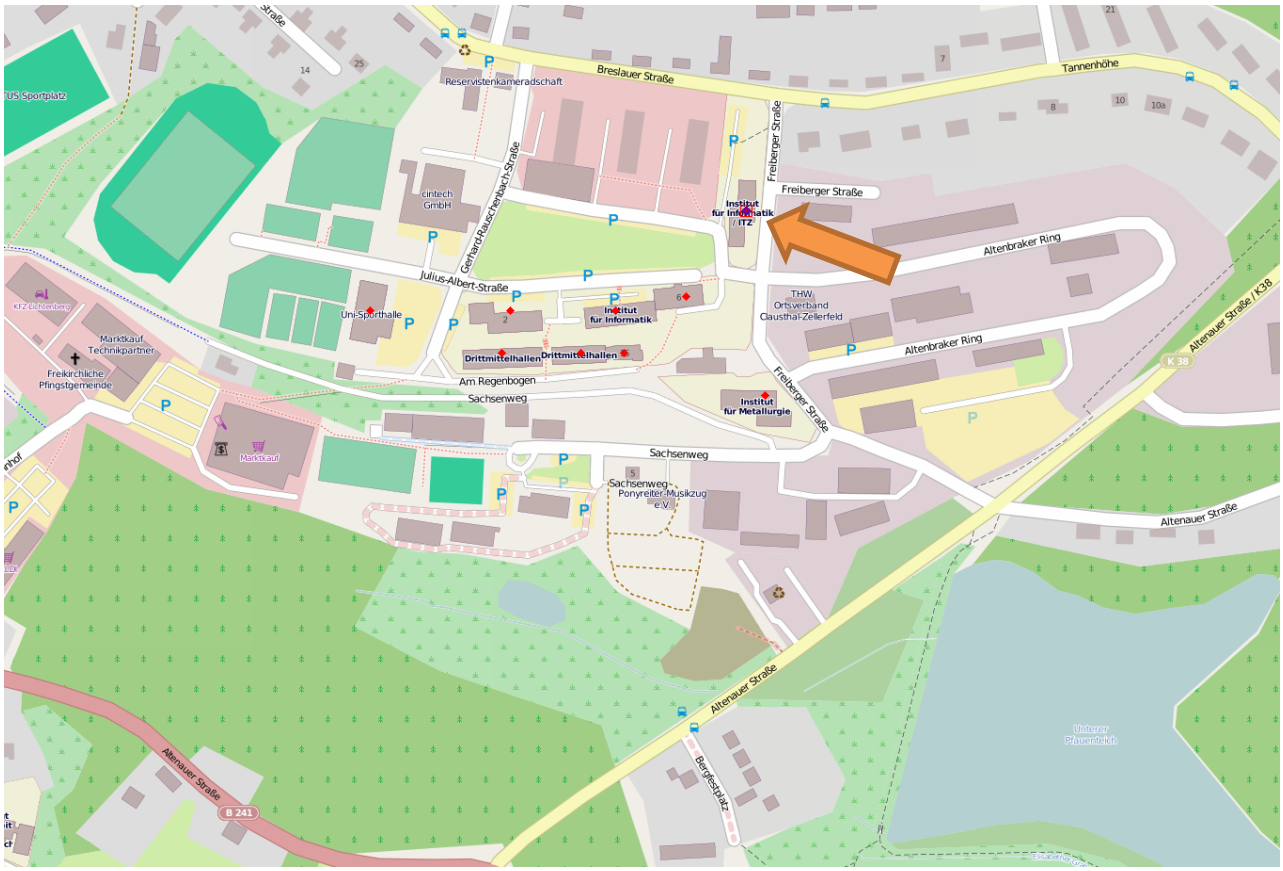
Der Vortrag findet in folgendem Gebäude statt:

Seminarraum 106a(T2)
Institut für Informatik, Hörsaal Gebäude (D5)
Albrecht-von-Groddeck-Straße 7
38678 Clausthal-Zellerfeld



<u>Online-Teilnahme:</u>

Alternativ ist auch eine Online-Teilnahme über BigBlueButton möglich. Besuchen Sie dazu die folgende Adresse:

https://webconf.tu-clausthal.de/rooms/xsr-sty-qwm-a8j/join