

Informatics in Civil Engineering, Prof. Dr. Uwe Rüppel

The [Institute of Informatics in Civil Engineering](#) deals with the research of computer-based methods for modeling and simulation of engineering tasks. This call focuses on the research of digital methods for modeling, simulation and analysis of critical infrastructures for interdisciplinary engineering safety considerations in an urban context. Special focus is placed on the areas of digital building modeling with BIM (Building Information Modeling), sensor technology, big data with data mining and machine learning, virtual and augmented reality as well as serious gaming.

Exemplary dissertation topics are:

- Modeling and simulation of critical dynamic processes within networked built infrastructure
- Digital transformation of civil engineering methods and measures for interdisciplinary hazard prevention in urban areas
- Safety for Smart Buildings in Smart Urban Areas: Interdisciplinary engineering protection strategies for the operation of built infrastructure

Suggestions for your own topics are welcome. Ideally, you have completed a master's degree in civil and environmental engineering or in related engineering areas (e.g. mechanics) with competences in informatics in civil engineering. If you have any questions about the technical topic or organizational boundary conditions, please contact Prof. Dr.-Ing. Uwe Rüppel (rueppel@iib.tu-darmstadt.de).