

## **Space-time methods for time-dependent partial differential equations**

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### **Organizers**

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**Abstract** Modern discretizations of time-dependent PDEs consider the full problem in the space-time cylinder and aim to overcome limitations of classical approaches such as the method of lines (first discretize in space and then solve the resulting ODE) and the Rothe method (first discretize in time and then solve the PDE). A main advantage of a holistic space-time method is the direct access to space-time adaptivity and to the backward problem (required for the dual problem in optimization or error control). Moreover, this allows for parallel solution strategies simultaneously in time and space.

Several space-time concepts were proposed (different conforming and non-conforming space-time finite elements, the parareal method, wavefront relaxation etc.), and topic has become a rapidly growing field in numerical analysis and scientific computing. The aim of this workshop is to stimulate the scientific exchange on the development and analysis of novel space-time discretization and solution methods for parabolic and hyperbolic space-time partial differential equations.

**Mathematics subject classification** 65N30, 65N38, 65N12