

# CSU PHYSICS COLLOQUIUM

**“Complex simulations: From numerical mathematics via software to applications ”**

**Wolfgang Bangerth**

**Colorado State University**

Monday, Oct. 21st at 4:00 p.m.

120 Engineering (Hammond Auditorium)

## **Abstract**

Simulating complex phenomena in nature and engineering requires the integration of mathematical approaches, algorithms, subject knowledge, and the creation of software. In this talk, I will outline some of my interdisciplinary work on using modern numerical methods for solving problems in the applied sciences. In particular, I will use examples from the geosciences and biomedical imaging, along with the open source software we have created to support such simulations.

## **Biography**

Wolfgang Bangerth is a professor of mathematics and geosciences (by courtesy) at Colorado State University, after having previously been a professor at Texas A&M University and a postdoc at the Institute for Computational Engineering and Sciences (ICES) at the University of Texas at Austin. His work focuses on computational science, and in particular on applying the finite element method to large-scale simulations in the sciences. He is the principal author of the deal.II finite element software library (<http://www.dealii.org>) and of the ASPECT code for the simulation of convection in the Earth mantle (<https://aspect.geodynamics.org/>).