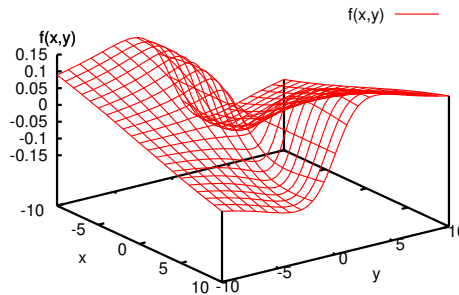


New doctoral course announcement:  
**Advanced computational mathematics**

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## 1 Annotation

The goal of this course is to provide a background for state-of-the-art techniques for computer solutions of first and second order partial differential equations. Over the last decades importance of different variants of finite element methods has arisen. Understanding the principle and philosophy of these class of methods is crucial for all researches in a field of mathematical modeling of dynamical processes such as quantity and quality modeling in hydrogeology (eg. transport of moisture in soils (incl. freezing/melting/evaporation), groundwater movement, kinetic sorption processes), climate/weather dynamics modeling, population/cell grow modeling, and other dynamical processes. The aim of this course is to provide a deep understanding of processes, which are behind recent finite element codes.

The prerequisite for successful course completion can be summarized as follows, students should be already able to describe their process of interest with particular differential equation (this skill can be obtained with the master course Applied Hydrogeology (ZVX16E) and students should have basic coding skills (following the master course Numerical methods (ZVX12E) gives sufficient background.

This course is a result of our cooperation with Department of Mathematics, Faculty of Civil Engineering, CTU in Prague.

## 2 Schedule

**Tuesday, 10.00-11.30 am**, meeting at 9.50 am in front of the main entrance of Faculty of Civil Engineering, CTU in Prague. (We will start already this week Tuesday February 18, however, joining the course next week is still ok, just let me know during this week.)