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# MATHEMATIKKOLLOQUIUM

Das Institut für Mathematik lädt zu folgendem Vortrag ein:

## **Pavel Krejčí**

Institute of Mathematics, Academy of Sciences of the Czech Republic

Professor Krejčí has been working in the fields of partial differential equations, hysteresis, phase transitions and variational inequalities. His publications include more than one hundred papers and the book "Hysteresis, Convexity and Dissipation in Hyperbolic Equations" (Tokyo, 1996). He worked for ten years in the Weierstrass Institute in Berlin. Currently, he is the Director of the Institute of Mathematics of the Academy of Sciences of the Czech Republic.

The talk of Professor Krejčí will be addressed to both colleagues and to students interested in applications of partial differential equations.

## **A model for water freezing in a deformable container**

We propose a model explaining the occurrence of high stresses due to the difference in specific volumes during phase transitions between water and ice in a container. The unknowns of the resulting evolution problem, namely the local volume increment, the absolute temperature, and the liquid fraction, are found as solutions to the mechanical equilibrium equation, the energy balance equation, and the phase dynamics equation. Plastic deformations of the container are also taken into account. This is a joint work with E. Rocca and J. Sprekels.

**Zeit: Dienstag, den 28. Januar 2014 um 12:15 Uhr**

**Ort: Victor-Franz-Hess-Haus, Technikerstraße 25, HS F**

**Gäste und Studierende sind herzlich willkommen!**

*Eva Kopecká*