Kolloquium Angewandte Mathematik
Prof. Thomas Apel (BauV1)
Prof. Matthias Gerdts (LRT1)
Prof. Joachim Gwinner (LRT1)
Prof. Markus Klein (LRT1)

Vortragsankündigung

Am **Dienstag, dem 01.07.2014,** hält **um 16:00 Uhr**

Herr **Prof. Pavel Krejčí**
(The Academy of Sciences of the Czech Republic, zur Zeit TU München)

einen Gastvortrag über das Thema

Elastoplastic bodies in dynamic contact

Der Vortrag findet im **Raum 1311** in **Gebäude 33** statt.

Vortragszusammenfassung

A classical mathematical approach to contact problems consists in applying different variants of the penalty method, with the intention to let the penalty parameter tend to infinity. Here instead, in the case of an elastoplastic body in contact with an elastoplastic obstacle, we propose to reformulate the problem equivalently as a PDE with hysteresis operators both in the constitutive law and in the contact boundary condition.

Analytical properties of the hysteresis operators Lipschitz continuity in suitable function spaces, monotonicity, energy inequalities) enable us to construct a regular solution by conventional methods and prove its uniqueness and continuous data dependence. The hysteresis dissipation terms then appear as sources of heat in the bulk and on the boundary in the energy balance. Under appropriate assumptions, the resulting non-isothermal system of momentum and energy balance equations then turns out to be well-posed, too. This is a joint work with Adrien Petrov, INSA Lyon.

Alle Interessierten sind dazu herzlich eingeladen.