

## **Abstract**

Oberwolfach Workshop:

### **Variational Methods for the Modelling of Inelastic Solids**

Dates:

**4 Feb - 10 Feb 2018** (Code: 1806)

Organizers:

**Georg Dolzmann, Regensburg**

**Adriana Garroni, Roma**

**Klaus Hackl, Bochum**

**Michael Ortiz, Pasadena**

The aim of this workshop is to bring together two communities working on the same topic from different perspectives. It will foster the exchange of ideas between experts from both mathematics and mechanics working on a wide range of questions related to the understanding and the prediction of material processes in solids. Common tools in the analysis include development of models within the broad framework of continuum mechanics, calculus of variations, nonlinear partial differential equations, nonlinear functional analysis, Gamma convergence, dimension reduction, homogenization, discretization methods and numerical simulations. The applications include and are not limited to nonlinear models in plasticity including microscopic theories at different scales and the role of pattern forming processes, effective theories, including relaxation, homogenization, dimension reduction and effects in singular structures like blisters or folding patterns in thin sheets, passage from atomistic or discrete models to continuum models, interaction of scales and passage from the consideration of one specific time step to the continuous evolution of the system, including the evolution of appropriate measures of the internal structure of the system.