Monday's Nonstandard Seminar 12

14:00

Author: Christoph Scheven (Universität Duisburg-Essen)

Title: **A variational approach to doubly nonlinear equations with nonstandard growth**

Abstract: We present existence results for a large class of doubly nonlinear equations of the type
$$\partial_t b(u) - \operatorname{div}\big(Df(Du)\big) = 0,$$
where f denotes a convex integrand with nonstandard growth. This class of equations includes on the one hand equations of generalized porous medium type with Orlicz-type growth and on the other hand gradient flows for functionals with p, q-growth or even exponential growth. For the construction of the solutions we exploit the variational structure of the diffusion part and adopt the method of minimizing movements to equations of generalized porous medium type.

The main results are due to a joint work with Verena Bögelein (Salzburg), Frank Duzaar (Erlangen-Nürnberg), and Paolo Marcellini (Firenze).