

# Gastvortrag

Donnerstag, 31. Oktober 2019

Uhrzeit: 15:00 Uhr

Seminarraum II

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**Elliptic and parabolic equations  
 under general and  $p, q$ -growth  
 conditions**

Abstract:

We consider *variational solutions* to the Cauchy-Dirichlet problem

$$\begin{cases} \partial_t u = \operatorname{div} D_\xi f(x, u, Du) - D_u f(x, u, Du) & \text{in } \Omega_T \\ u = u_0 & \text{on } \partial_{\text{par}} \Omega_T \end{cases}$$

where the function  $f = f(x, u, \xi)$ ,  $f: \mathbb{R}^n \times \mathbb{R}^N \times \mathbb{R}^{N \times n} \rightarrow [0, \infty)$ , is convex with respect to  $(u, \xi)$  and coercive in  $\xi \in \mathbb{R}^{N \times n}$ , *but  $f$  not necessarily satisfies a growth condition from above*. A motivation to consider a class of such energy functions  $f$  can be also easily found in the stationary case, where a large literature in the *calculus of variations* is devoted to the minimization of *general and  $p, q$ -growth problems*. In the parabolic context the notion of variational solution, introduced by Bögelein-Duzaar-Marcellini, is compatible with the lack of *the same polynomial growth* from below and from above.

Eingeladen von Verena Bögelein