UNIVERSITÀ DI PARMA

DIPARTIMENTO DI SCIENZE MATEMATICHE, FISICHE E INFORMATICHE

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Notizie	SEMINARIO di Analisi Matematica

Data: **lunedì 22 gennaio**, ore **15**

Luogo: **Aula C**, Plesso di Matematica

Relatore: Prof. **Peter Lindqvist**,
Norwegian University of Science and Technology Trondheim

Titolo: **Unbounded "supersolutions"**

Tutti gli interessati sono invitati a partecipare,
Proff. Alessandra Lunardi e Giampiero Palatucci

Abstract:

The celebrated book *Degenerate Parabolic Equations* by E. DiBenedetto contains the foundation for my talk about the viscosity *super*solutions of the Evolutionary p-Laplace Equation

$$\frac{\partial u}{\partial t} = \nabla \cdot \left(|\nabla u|^{p-2} \nabla u \right), \qquad p > 2.$$

In the slow diffusion case $p > 2$, the viscosity supersolutions $v : \Omega \times (0, T) \to (-\infty, \infty]$ exhibit a strange dichotomy depending on whether they are locally summable to the power $p - 2$ or not. (They are also called p-superparabolic functions.)

Actually, the inpact to the references below, was a discussion in Parma a few years ago, when a counterexample was made.

J. KINNUNEN & P. LINDQVIST: *Unbounded supersolutions of some quasilinear equations: A dichotomy*, Nonlinear Analysis **131**, 2016.

T. KUUSI, P. LINDQVIST & M. PARVIAINEN: *Shadows of Infinities*, Ann. Math. Pura Appl. (4) **195**, 2016.