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Mês de: Fevereiro 2011

SEMINÁRIO DE ANÁLISE E EQUAÇÕES DIFERENCIAIS

Dia 24 de Fevereiro (quinta-feira), às 13h30, na Sala B3-01

"Parabolic equations with double variable nonlinearities: existence, uniqueness and comparison principle"

Stanislav Antontsev

(CMAF)

Abstract:

The talk is devoted to the study of the doubly nonlinear parabolic equation with nonstandard growth conditions:

$$u_t = \operatorname{div}\left(a(x,t,u)|u|^{\alpha(x,t)}|\nabla u|^{p(x,t)-2}\nabla u\right) + f(x,t)$$

with given variable exponents $\alpha(x,t)$ and $p(x,t)$. We establish conditions on the data which guarantee the existence of bounded weak solutions, uniqueness and comparison principle. The analysis relies on the methods developed in [1, 2, 3].

References

[1] ANTONTSEV S.N., SHMAREV S.I., *Parabolic equations with double variable nonlinearities*, Mathematics and Computers in Simulation, (2011), 1-15. doi:10.1016/j.matcom.2010.12.015 doi:10.1016/j.matcom.2010.12.015

[2] ANTONTSEV S.N., M. CHIPOT AND SHMAREV S.I., *Uniqueness and comparison theorems for solutions of doubly nonlinear parabolic equations with nonstadard growth conditions*, submitted to the special issue of the journal "Communications on Pure and Applied Analysis"(2011), 1-19.

[3] ANTONTSEV S.N., SHMAREV S.I., *Anisotropic parabolic equations with variable nonlinearity*. Publicacions Matematiques de l'Universitat Autónoma de Barcelona, 53(2), (2009), 355-399.

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