



Centro de **Matemática**
Universidade do Porto

Dynamical Systems Seminar

Date. March 15, 14h30

Place. Room M031

Speaker. Radoslaw Czaja¹ (CAMGSD, Instituto Superior Técnico, Lisbon)

Title. Nonautonomous Dynamical Systems and Their Pullback Attractors

Abstract. The study of the long-time behavior of solutions to nonautonomous differential equations from the point of view of a dynamical system can be based on the notion of a pullback attractor, which plays a similar role as the global attractor in autonomous dynamical systems. In this lecture I will present this notion and variations of its definition. Moreover, I will formulate the theorem on the existence of a pullback attractor if the evolution process is a family of closed operators. The abstract result will be given in the context of the smoothing properties of the process and for pullback attractors attracting a given universe, i.e., a chosen class of possibly time-dependent families of sets. An application of the result to nonautonomous reaction-diffusion equations will be also presented.

Remark. Coffee with the speaker is served after the talk (15h30 - 16h00)

¹Radoslaw Czaja is currently Researcher at Instituto Superior Técnico, Lisbon. He obtained the M.Sc. (2000) and the Ph.D. (2004) degrees in Mathematics at University of Silesia, Poland, under the supervision of Prof. Tomasz Dlotko and Prof. Jan Cholewa, respectively. During his academic studies, Radoslaw received some awards such as the Prize for the best Master dissertation in Mathematics (2000) and the Rector's award (2004). He is particularly interested in dynamical systems governed by partial differential equations, in the asymptotic behavior of solutions, in attractors and their dimension and in the description of global attractors. Radoslaw's homepage is <http://www.math.ist.utl.pt/~czaja/>.