# Predictability in time-dependent scenarios, a toy model

**P. Sancho** (1), J. P. Ortiz de Galisteo (2)

(1) GPV de Valladolid, INM, Spain (psancho@inm.es), (2) Centro Meteorólogico Territorial en Castilla y León, INM, Spain (jportiz@inm.es)

Predictability studies play a fundamental role in the understanding and quantification of the actual skill of numerical models. The solar radiation, the fundamental force driving the atmospheric system, is a periodic variable. In the literature, however, there are very few studies about the possible influence of these time-dependent forcings on the predictability of the system. We present in this work an approach to the problem based on the analysis of a simple system, a non-autonomous logistic equation. We find important differences with the autonomous case, for instance, the dependence of the sign of Lyapunov's exponents on the frequency of the forcing. We consider if these results can be extended to more realistic atmospheric and climatic models.