RWTHAACHEN
UNIVERSITY
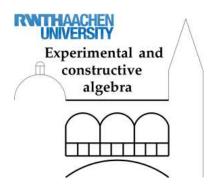Experimental and
constructive
algebra

Vortrag

Mittwoch, 12. März 2014, 11:00 Uhr, Seminarraum Lehrstuhl A für Mathematik (HG 248)

Ferdinand Verhulst (University of Utrecht, Utrecht, Niederlande):
The hunt on French ducks in population dynamics

Equations with periodic coefficients for singularly perturbed growth can be analysed by using fast and slow timescales which involves slow manifolds, canards and the dynamical exchanges between several slow manifolds. We extend the time-periodic P.F. Verhulst-model to predator-prey interaction where two slow manifolds are present. The fast-slow formulation enables us to obtain a detailed analysis of non-autonomous systems. In the case of sign-positive growth rate, we have the possibility of periodic solutions associated with one of the slow manifolds, also the possibility of extinction of the predator. Under certain conditions, sign-changing growth rates allow for periodic solutions that arise from dynamic interaction between slow manifolds.

Wir laden alle Interessierten herzlich ein.