

1106-35-809

Mónica Clapp* (monica.clapp@im.unam.mx), **Marco Ghimenti** and **Anna Maria Micheletti**. *Solutions to a singularly perturbed supercritical elliptic equation on a Riemannian manifold concentrating at a submanifold.*

Many models for pattern formation in various branches of science are based on A.Turing's idea that, in a system of equations modeling two interactive substances, different diffusion rates may lead to nonhomogeneous distributions of these substances.

Showing existence and determining the profile of solutions for this type of models has been a very active area of research during the last three decades. Many results concerning concentration at a point or at a finite number of points are now available. Quite recently, solutions concentrating at higher dimensional manifolds have been shown to exist.

In this talk we shall consider a singularly perturbed semilinear elliptic equation on a closed Riemannian manifold, and show how its geometry can be used to produce solutions which concentrate at manifolds of different positive dimensions, up to some supercritical nonlinearities. (Received September 07, 2014)