
Existence of quasipatterns in the superposition of two hexagonal patterns for the Swift Hohenberg PDE

Gerard Iooss*¹

¹Labo J. A. Dieudonné – Ministère de l'Éducation nationale, de l'Enseignement supérieur et de la Recherche – France

Abstract

Let us consider a quasilattice spanned by the superposition of two hexagonal lattices in the plane, differing by a rotation of angle β . We study bifurcating quasi patterns solutions of the Swift-Hohenberg PDE, built on such a quasilattice, invariant under rotations of angle $\pi/3$. For nearly all β , we prove that in addition to the classical hexagonal patterns, there exist four bifurcating quasi patterns, with equal amplitudes on each basic lattice.

*Speaker