Geometry, Physics, and Representation Theory
Northeastern University

Frederic Fauvet
Institut de Recherche Mathématique Avancée, Strasbourg University, France.

Thursday, April 20, 2:50-3:50 pm, Nightingale Hall 544

Explicit Linearization of One-dimensional Germs through Tree Expansions

Abstract

We revisit the classical linearization problem of non-resonant germs of diffeomorphisms in one complex dimension, which contains the well-known difficulties due to the so-called small divisor phenomenon. Using a small part of J. Ecalle's "mould formalism", we obtain explicit tree – indexed formulas for the transformations involved, which yield Yoccoz's lower bound for the radius of convergence of the linearization; moreover, we reach a new global regularity result with respect to the multiplier (C^1 holomorphy, with quasianalyticity properties of monogenic character).

Joint work with David Sauzin (CNRS Paris and Pisa) and Frederic Menous (Orsay Univ.); https://hal.archives-ouvertes.fr/hal-01053805/ , to appear in Bulletin de la Soc. Math. de France.