

Seminar 1

The parameterization method for invariant manifolds

Abstract

The aim of this lecture seminar is to introduce the parameterization method, which is used to study the existence and the properties of invariant manifolds of both discrete and continuous dynamical systems and to obtain algorithms that allow to compute approximations of those invariant manifolds. Using this method, several invariant manifold theorems will be presented. We follow [3] for the lecture 2, [1] for the lectures 3 – 5 and [2] for the lecture 6.

Lecture 1, 06/03/19

Title: An overview of the parameterization method

Speaker: Prof. Ernest Fontich (UB)

Lecture 2, 13/03/19

Title: A theoretical framework for the parameterization method

Speaker: Clara Cufí Cabré (UAB)

Lecture 3, 20/03/19

Title: The parameterization method for maps and flows

Speaker: Salvador Borrós Cullell (UAB)

Lecture 4, 03/04/19

Title: Analytic one-dimensional stable manifolds

Speaker: Iván Sánchez (UAB)

Lecture 5, 10/04/19

Title: A C^0 invariant stable manifold theorem

Speaker: Mar Giralt (UPC)

Lecture 6, 17/04/19

Títol: Numerical approximations of invariant manifolds

Speaker: Òscar Rodríguez (UPC)

References

- [1] Cabré, X., Fontich, E., de la Llave, R. *The Parametrization Method for Invariant Manifolds III: Overview and Applications*, J. Differential Equations 218 (2005), pp 444-515.
- [2] Haro, À., Canadell, M., Figueras, J.L., Luque, A., Mondelo, J.M. *The Parametrization Method for Invariant Manifolds*, Springer, Switzerland, 2016.
- [3] Dieudonné, J. *Éléments d'analyse. Fondements de l'analyse moderne*. (French) Cahiers scientifiques, Gauthier-Villars éditeur, 1972.