CONTRIBUTIONS TO CODIMENSION K BIFURCATIONS IN DYNAMICAL SYSTEMS THEORY

Goal of the project

The overall project objectives are to produce new knowledge in the area of codim k bifurcations for continuous and discrete (smooth and non-smooth) dynamical systems and provide training in this area of research to early stage researchers.

Short description of the project

The project achieves its objectives during secondments.

Project implemented by

1. Politehnica University Timișoara (Coordinator)
2. Autonoma University of Barcelona
3. Obuda University
4. West University of Timisoara
5. University of Craiova
6. Acmit Gmbh, Austria
7. University North Caroline at Charlotte
8. Shanghai Jiao Tong University, China
9. University of Sao Paulo, Brazil

Implementation period

1 April 2018 - 31 March 2022

Main activities

1. Study degenerate Bautin bifurcations;

2. Study degenerate Hopf-Hopf bifurcations;

3. Study other codimension k bifurcations in continuous (smooth) systems;

4. Study other codimension k bifurcations in discrete (smooth) systems;

5. Study codim k bifurcations in non-smooth systems;

6. Study bifurcations in non-smooth systems with impacts.

Results

Published articles:

1. J. Llibre, C. Valls, C. Vidal, Global dynamics of the Buckingham's two-body problem, ASS, (2018), 363:255.
2. S. Li, J. Llibre, Phase portraits of continuous piecewise linear Liénard, CSF, 120 (2019), 149–157.
3. C. Rocsoreanu, M. Sterpu, Approximations of the heteroclinic orbits near a double-zero bifurcation with symmetry of order two (in press).

Applicability and transferability of the results

Not applicable

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Research team

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