Melnikov analysis in nonsmooth differential systems with nonlinear switching manifold.

Gerado H. Anacona.

Abstact

The main idea of the seminar will be present the Melnikov´s theory up to order 2, a sketch of the proof of theorem central in the article 1. and how is used for finding lower bounds for the maximum number of limit cycles for certain systems with discontinuity set in the form $y = x^n$.

Bibliography

1. J. L. Bastos, C. A. Buzzi, J. Llibre, and D. D. Novaes. Melnikov analysis in nonsmooth differential systems with nonlinear switching manifold. Journal of Differential Equations, 267(6):3748 − 3767, 2019.

2. K.S. Andrade, O.A. Cespedes, D.R. Cruz, D.D. Novaes. HIGHER ORDER MELNIKOV ANALYSIS FOR PLANAR PIECEWISE LINEAR VECTOR FIELDS WITH NONLINEAR SWITCHING CURVE, arXiv:2006.11352 (2021).