

Seminario del Grupo GISDA

Grupo de Investigación en
Sistemas Dinámicos y Aplicaciones



UNIVERSIDAD DEL BÍO-BÍO

Título: Invariant Manifolds near L_1 and L_2 in the Planar Elliptic Restricted Three-Body Problem



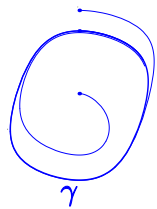
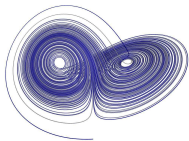
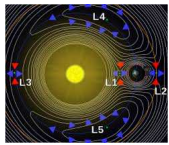
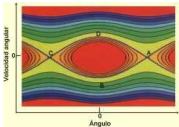
Expositor: Gladston Duarte

Institución: AGH University of Science and Technology, Polonia.

Fecha: Martes 28 de junio, 2022.

Horario: 17:00 a 18:00 hrs.

Lugar: Por zoom.



Resumen: In this talk we discuss the connections between the stable and unstable manifolds of tori around the points L_1 and L_2 of the Planar Elliptic Restricted Three-Body Problem (PERTBP). The study of connections between the invariant manifolds of the periodic orbits around these points, in the Planar Circular RTBP, and the creation of bridges between different types of orbits was already done in [1]. In the case of considering an elliptical movement, we investigate how the analysis of the orbit of comet 39P/Oterma can be improved in a more quantitative way. We compute the dynamical objects that interact with this comet (mixing the tools presented in [2] and the parallel shooting technique), and use some temporal+spatial sections in the phase space to better visualize these objects together with Oterma, when fitting its data into this model.

References:

[1] Koon, W. S., Lo, M. W., Marsden, J. E., Ross, S. D.: Resonance and Capture of Jupiter Comets, *Celestial Mechanics and Dynamical Astronomy* 81: 27–38, 2001.

[2] Jorba, A.: Numerical Computation of the Normal Behaviour of Invariant Curves of n -Dimensional Maps, *Nonlinearity* 14: 943–976, 2001.