Actividades Formativas IMEIO/ Educational Activities IMEIO

Título/Title: Hamiltonian Chaos: From theory to computational aspects
Organizador/Organizer: Makrina Agaoglou/makrina.agaoglou@upm.es
Profesores/Lecturers: Makrina Agaoglou/Matthaios Katsanikas
Horas totales/Number of hours: 12
Lugar/Location: The first part onsite (ETSII, UPM) and the second part Online
Fechas/Dates: 02.02.2026-13.02.2026

Resumen/Summary: In this course, we will explore in the first part various tools of dynamical systems, such as the method of Lagrangian Descriptors, Lyapunov exponents, SALI, GALI, and classical techniques like the Poincaré Surface of Section. These methods provide essential insights into the structure of complex dynamical behaviors, enabling the analysis of stability, chaos, and transport phenomena even in systems that initially appear unpredictable. The course will also examine in the second part the stability of periodic orbits and the occurrence of bifurcations, linking these concepts directly to the tools introduced.

¿Aceptarías que el curso se pudiera emitir por videoconferencia restringido a algunos alumnos del doctorado que no pudieran asistir presencialmente? Would you accept that the course could be given by videoconference restricted to some doctoral students who could not attend in person? YES