

Introduction to dynamical systems

ECTS : 6

Volume horaire : 30

Description du contenu de l'enseignement :

1. Examples of dynamical systems in discrete and continuous time (circle rotation, shift, hyperbolic dynamical system, horseshoe, flow, section and suspension, attractor)
2. Topological dynamics, circle homeomorphisms and Poincaré classification, hyperbolic dynamics (geodesic flow, horocyclic flow)

Bibliographie, lectures recommandées :

- V.I. Arnold, *Ordinary differential equations* (contains prerequisite matters)
- V.I. Arnold, *Geometric methods in the theory of ordinary differential equations* (further reading)
- M. Brin and G. Stuck, *Introduction to dynamical systems* (great introduction to the field)