

## SMOOTH CONJUGACY IN HYPERBOLIC DYNAMICS

### Lectures 1 and 2

#### (1) Hyperbolic Dynamics

- Anosov diffeomorphisms on tori and nilmanifolds
- Hölder continuous structures. Hölder continuity of the conjugacy.
- Livshitz Theorem.
- SRB measures.

#### (2) Partially Hyperbolic Dynamics

- Hirsch-Pugh-Shub structural stability.
- Pathologies of central foliation.
- Mather spectrum.

#### (3) Smooth conjugacy problem in dimension two.

### Lectures 3 and 4

#### (1) Smooth conjugacy problem for toral automorphism in dimension 3.

#### (2) De la Llave's counterexample and its extension to reducible toral automorphisms.

#### (3) Smooth conjugacy problem in $C^1$ -neighborhood of irreducible toral automorphism with real spectrum.

#### (4) Additional moduli of smooth conjugacy in the neighborhood of de la Llave's counterexample.

### Prerequisites

Basic ergodic theory. Elements hyperbolic and partially hyperbolic dynamics. Any book on the subject. For example Katok-Hasselblatt or Pesin's little book on partially hyperbolic dynamics.