



Mini-Workshop on Low-Dimensional Dynamical Systems and Related Topics: Topological and Statistical Perspectives

Time: September 18 – September 19, 2026

(Arrival: September 18, 2026; Departure: September 19, 2026)

Venue: Room 1801, Guanghua East Main Building (Handan Campus)

Organizer: Guohua Zhang (Fudan University)

Time	Talk	Speaker
September 18, 2026 (Room 1801)		
15:00-15:45	Symbolic extension of $C^{1,\alpha}$ maps in arbitrary dimensions	Dawei Yang
15:45-16:30	A Conservative Partially Hyperbolic Dichotomy: Hyperbolicity versus Nonhyperbolic Measures	Jinhua Zhang
16:30-17:15	Statistical behavior of systems with nested invariant cones	Yufeng Zhang
Dinner		

Talk: Symbolic extension of $C^{1,\alpha}$ maps in arbitrary dimensions

Speaker: Dawei Yang (Soochow University)

Abstract: We prove that every $C^{1,\alpha}$ self-map of a compact Riemannian manifold, in arbitrary dimension, admits a symbolic extension. This gives a positive answer to the conjecture of Downarowicz and Newhouse in arbitrary dimensions. This is a joint work with C. Luo.

Talk: A Conservative Partially Hyperbolic Dichotomy: Hyperbolicity versus Nonhyperbolic Measures

Speaker: Jinhua Zhang (Jilin University)

Abstract: In this talk, we will focus on the classical examples of partially hyperbolic diffeomorphisms in dimension three: Derived from Anosov diffeomorphisms, diffeomorphisms in neighborhoods of the time-one map of the geodesic flow on a surface of negative curvature, and skew products with circle fibers. For any of these classes, under the conservative assumption, we establish the following dichotomy: either the diffeomorphism is Anosov, or it possesses nonhyperbolic ergodic measures. This is a joint work with L. Diaz and J. Yang.

Talk: Statistical behavior of systems with nested invariant cones

Speaker: Yufeng Zhang (University of Alberta)

Abstract: Nested invariant cones (NICs) capture hierarchical order and oscillatory structures in many finite- and infinite-dimensional dynamical systems. We discuss how NICs constrain long-term recurrence and statistical behavior. For a class of semiflows strongly monotone with respect to NICs, we prove that every connected component of the Birkhoff center lies in a fixed cone layer, and the support of every invariant probability measure has the same stratified structure. Under a transversality condition relative to a codimension- d linear subspace, each component embeds homeomorphically into $\mathbb{R}^d$; in particular, if $d=1$ or 2 , the topological entropy is zero, independently of system dimension. We then apply the theory to bidirectional cyclic feedback systems and parabolic equations on the circle. Using the zero number, we construct NICs and show that every connected component of the Birkhoff center embeds in the plane, hence the topological entropy is zero.