动力系统前沿进展
Frontiers in Dynamical Systems

March 13-15, 2026

School of Mathematical Sciences, Peking University

动力系统前沿进展　　会议通知
Frontiers in Dynamical Systems

尊敬的＿＿＿＿＿＿老师：

　　您好！动力系统作为数学的重要分支，近年来取得了多项重要进展。为有效进行这些学术交流，我们拟于2026年3月13日至2026年3月15日在北京大学举办"动力系统前沿进展"学术研讨会。我们诚挚地邀请您参加本次会议。

　　本次会议不收取会务费，提供会议期间用餐；住宿、交通及其他费用请自理。

　　会议日程：2026年3月13日报到；2026年3月14日-15日学术报告

　　会议地点：北京大学智华楼丁石孙教室

　　住宿地点：北京大学中关新园

　　会议联系人：

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　　为方便做好会务安排，烦请您尽可能在2月10日前点击下面链接报名：https://v.wjx.cn/vm/rP5L5Ci.aspx#

期待与您在北京相见！

北京大学数学科学学院

2026年1月20日

Schedule of the Conference

Time	Speaker	Title	Chair
March 14, Ding Shisun Lecture Theater, 智华楼丁石孙教室(111)			
09:00-09:20	Opening Speech: Liu, Ruochuan; Zheng, Zhiming		Zhang, Zhifei
09:20-10:00	Group photo, tea break		
10:00-10:50	Ye, Xiangdong	Results around the Katznelson's question	Wen, Lan
10:50-11:40	Wilkinson, Amie	Blenders as a tool in partially hyperbolic dynamics	Sun, Wenxiang
12:00-14:00	Box lunch		
14:00-14:50	Bonatti, Christian	Toward the notion of robust heterodimensional cycle of measures	Ures, Raúl
14:50-15:20	Tea Break		
15:20-16:10	Díaz, Lorenzo J.	Robust heterodimensional cycles of co-index two via split blender machines	Nassiri, Meysam
16:10-17:00	Xia, Zhihong	A theorem, my proof and AI's proof	Zhang, Hongkun
18:00-20:00	Dinner (Hongya Hall, Shaoyuan, 勺园弘雅厅)		
March 15, Ding Shisun Lecture Theater, 智华楼丁石孙教室(111)			
08:30-09:20	Lü, Kening	Turbulence, Lyapunov exponents, and SRB measures in infinite-dimensional dynamical systems	Li, Yong
09:20-10:10	Pacífico, María José	On stationary densities under BV noise	Gelfert, Katrin
10:10-10:40	Tea Break		
10:40-11:30	You, Jiangong	The denseness problem of uniformly hyperbolic systems in quasiperiodic cocycles	Shang, Zaijiu
11:30-12:20	Jiang, Yunping	Space of geometric Gibbs measures: Uniqueness and Teichmüller complex manifold structure	Wang, Yuefei
12:20-14:00	Lunch (3rd floor, Nongyuan, 农园三层)		
14:00-17:00	Free discussion		
18:00-20:00	Dinner (Yiyuan Chinese Restaurant, 怡园中餐厅)		

Abstract of the conference talks

Title: Results around the Katznelson's question

Speaker: Ye, Xiangdong (叶向东); University of Science and Technology of China

Abstract: Katznelson's question is a long-standing open question connected to several areas of mathematics, including dynamics, graph theory, combinatorial number theory, and group theory.

In this talk, I will present results around this question and related ones, which are linked to the notions of scattering, weak scattering, and the weak product recurrence property. The presentation is based mainly on joint works with Huang, Shao and Xu, as well as a recent joint work with Guo, Qiu and Xu.

Title: Blenders as a tool in partially hyperbolic dynamics

Speaker: Wilkinson, Amie; The University of Chicago

Abstract: Partially hyperbolic diffeomorphisms possess stable and unstable foliations, which are contracted in forward and backward time, respectively. Except in the special case of Anosov diffeomorphisms, the sum of the stable and unstable dimensions is strictly less than the dimension of the ambient manifold. The resulting lack of transversality between this pair of foliations presents a central challenge in studying the dynamics of partially hyperbolic maps; in particular, there is no hope to expect a given stable leaf to intersect a given unstable leaf, even under iteration, and such transverse intersections are key in establishing chaotic properties in hyperbolic dynamics. In the 90s, Bonatti and Diaz developed a mechanism to work around this lack of transversality, called stable/unstable blenders, which they used to construct open sets of non-Anosov transitive diffeomorphisms.

In this talk I will survey work with Artur Avila and Sylvain Crovisier that highlights the use of blenders to establish properties other than transitivity. The applications I hope to discuss are behind the following results:

1) Stable ergodicity is C^1-dense among partially hyperbolic diffeomorphisms (2017). Here "superblenders" are used to rescue a Hopf argument (an application of blenders that originated with Rodriguez Hertz, Rodriguez Hertz, Tahzibi and Ures).

2) For a C^1-open and C^r-dense set of partially hyperbolic diffeomorphism with 1-dimensional expanding center, the (strong) unstable foliation is minimal (in preparation). Here global geometric blenders are used to construct perturbations leading to minimality of these foliations.

Title: Toward the notion of robust heterodimensional cycle of measures (joint work with Lorenzo Diaz and Katrin Gelfert)

Speaker: Bonatti, Christian; Directeur de recherches au CNRS

Title: A theorem, my proof and AI's proof

Speaker: Xia, Zhihong (夏志宏); Great Bay University

Abstract: Not long ago, I proved an interesting theorem involving dynamical systems and topology. I asked AI whether it can prove the theorem, indeed, it gave me a proof. I will present both mine and AI's proof.

Title：Turbulence, Lyapunov exponents, and SRB measures in infinite-dimensional dynamical systems

Speaker: Lü, Kening (吕克宁); Sichuan University

Abstract: In this talk, I will present several results related to Lyapunov exponents, SRB measures, entropy, and horseshoes in the context of infinite-dimensional dynamical systems. I will also discuss recent work on the ergodicity and statistical dynamics of the 2D Navier-Stokes equation, driven by both time-dependent deterministic and stochastic forces. Additionally, I will explore the connection between SRB measures and turbulence.

Title: The denseness problem of uniformly hyperbolic systems in quasiperiodic cocycles

Speaker: You, Jiangong (尤建功); Nankai University

Abstract: Avila-Jitomirskaya proved that uniformly hyperbolic systems are dense in the one-parameter family of Schrödinger cocycles with the potential cos x. We will show that uniformly hyperbolic systems are dense in the one-parameter family of Schrödinger cocycles for all potentials of Type I functions (including cos x). （Based on joint works with Lingrui Ge, Svetlana Jitomirskaya and Qi Zhou）

Title: Robust heterodimensional cycles of co-index two via split blender machines

Speaker: Díaz, Lorenzo J.; Catholic University of Rio de Janeiro (PUC)

Abstract: For simplicity, in this talk we restrict our attention to diffeomorphisms on 4-dimensional manifolds. We study heterodimensional cycles of co-index two, namely cycles associated with saddles whose stable indices are 1 and 3.

We introduce a class of such cycles, which we call non-escaping, and show that they simultaneously generate robust heterodimensional cycles of both co-index one and co-index two, that is, cycles associated with pairs of saddles of indices (1,2), (2,3), and (1,3).

We present a simple geometric setting in which these cycles arise, discuss further scenarios (including cocycles of three-dimensional matrices), and outline the main mechanisms involved, in particular different types of blender-like sets.

This is joint work with Barrientos, Ki, Lizana, and Pérez.

Title: On stationary densities under BV noise

Speaker: Pacífico, María José; Federal University of Rio de Janeiro

Abstract: We study stationary measures of random dynamical systems obtained by perturbing deterministic maps with i.i.d. additive noise whose distribution has bounded variation density.

Our first goal is to establish the existence and regularity properties of stationary densities, highlighting the smoothing effect induced by noise and its interaction with the deterministic dynamics.

Our second goal is to develop a rigorous framework for their numerical approximation, providing validated error bounds suitable for computer-assisted proofs via finite-rank discretizations of transfer operators.

We apply the theory to non-uniformly hyperbolic systems, including the Contracting Lorenz Attractor and the Hénon map, illustrating both regularization phenomena and the feasibility of validated computation. This is joint work with Ricardo Bioni and Isaia Nisoli.

Title: Space of geometric Gibbs measures: Uniqueness and Teichmüller complex manifold structure

Speaker: Jiang, Yunping (蒋云平); CUNY QC & GC

Abstract: Building on the framework introduced in our previous work, where geometric Gibbs measures were developed to complete the space of classical Gibbs measures within the Teichmüller metric setting, we formulated a uniqueness conjecture for geometric Gibbs measures. In this talk, I will present our recent proof of this conjecture. This uniqueness result allows us to fully realize the complex manifold structure induced by the Teichmüller metric on the space of all geometric Gibbs measures. We will also discuss further results concerning the relationship between geometric Gibbs measures and harmonic measures supported on dynamical quasicircles in the Riemann sphere, as well as asymptotically conformal rigidity and ergodicity properties of geometric Gibbs measures.

北京大学燕园校区地图
Map of Peking University Main Campus

A School of Mathematical Sciences (Zhi-Hua Building)

◆ Ding Shisun Lecture Hall

B Beijing International Center for Mathematical Research

C Zhongguanyuan Global Village Hotel

★ Southeast Gate

Teaching & Research Area

1-9 Wen Zhong Building, CCER
10 Archaeology Teaching Building
11 Biotechnology Building
12 Beijing International Center for Mathematical Research
13 Mathematical Research
14 Lee Shau Kee Humanities Academy
15 School of Economics Building
16 Foreign Languages Building
17 Democracy Building
18 School of Chinese as a Second Language
19 Russian Building
11 Classroom Building No.1
12 Hernolu Sensing Building
13 Center for Nuclear Magnetic Resonance
14 Guang Hua New Building
15 Chun Li Building
16 International Studies Building
17 Luo Ke Guan Building
18 Chinese and History Building
19 Philosophy Building
20 Former Geology Building
21 Former Chemistry Building
22 Guang Hua Building
23 Students' Canteen No.1
24 Audio-Visual Education Building
25 Natural Science Teaching Building
39-34 Natural Science Building No.1-5
32-9 Classroom Building No.1-4
35 The Graduate School of Education
36 Wu Li Building
37 Zhang Gai Building
53 Heavy Building

Administrative Building
North Chemistry Building
North Chamber
South Chamber
Former Biology Building
The Police Station
Ito Faw Sun Student Center
Information Students Division)
Office of Financial Affairs
Computer Service Center

Tong Yuan Restaurant
Agricultural Bank of China
Vou Mei Supermarket
Students' Canteen No.5
Public Bath
Store
Post Office
Industrial and Commercial Bank of China
Yan Yuan Restaurant
Yi Yuan Restaurant
Jia Yuan Restaurant
Campus Restaurant
Students' Canteen No.1
Resource Hotel
PKU Campus Hospital

Arthur M. Sackler Museum of Art and Archaeology
Archaeology
Archives
Museum of Peking University History
Library
Gymnasium
Olua Tai International Center
Gymnasium No.1
Red Mansion No.1 No.6
Gymnasium No.5
Peking University Centennial Lecture Hall
Overseas Furlongo Center
PKU Gymnasium
Lin Hu Xuan

Zhongguanyuan Global Village
中关新园
Zhongguancun North Street
Qinghua South Road
Chenglu Road
East Gate
Side East Gate
West Gate
Side West Gate
Southwest Gate
South Gate
Ke Xue Road
Zhongguancun North Street