華中科技大學数学中心

Center for Mathematical Sciences

First Symposium on

Stochastic Partial Differential Equations

第一届随机偏微分方程研讨会

June 23-26, 2016

Wuhan, China

June 23-26, 2016

Center for Mathematical Sciences

Huazhong University of Science and Technology

Wuhan, China

Honorary Chairman: Boling Guo

Organizers:

Jinqiao Duan (duanjq@gmail.com)

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Supported by：

Huazhong University of Science and Technology (HUST)

National Science Foundation of China (NSFC)

Nanjing Normal University

Northwestern Polytechnical University

http://mathcenter.hust.edu.cn/activities/meeting/fsspde.html

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Program overview

	Thursday June 24		Friday June 25	Saturday June 26
9:00-9:30	Opening Ceremony & photo	**8:30-9:00**	Linshan Wang	Huaizhong Zhao
9:45-10:15	Paoliu Chow	**9:00-9:30**	Zhao Dong	Yongsheng Li
10:15-10:30	Tea Break	**9:30-9:50**	Tea Break	Tea Break
10:30-11:00	Shizan Fang	**9:50-10:20**	Guolian Wang	Yong Chen
11:00-11:30	N. D. Cong	**10:20-10:50**	Guanggan Chen	Chunxiao Guo
		10:50-11:20	Wei Yan: Open problems	Fuke Wu
12:00-14:00	Lunch	**12:00-14:00**	Lunch	Lunch
14:00-14:30	Yaozhong Hu	**14:00-14:30**	Yanbin Tang	Jianwei Shen
14:30-15:00	Yong Xu: Open problems	**14:30-15:00**	Qi Zhang	Desheng Yang
15:00-15:20	Tea Break	**15:00-15:20**	Tea Break	Tea Break
15:20-15:50	Xicheng Zhang	**15:20-15:50**	Jing Wang	Xianming Liu
15:50-16:20	Lin Lin	**15:50-16:20**	Yue Wu	Ji Li: Open problems
16:20-17:20	Guangying Lv: Open problems	**16:20-17:20**	Wei Wang: Open problems	Hongjun Gao: Final remarks
		18:30-21:00	Banquet	

会议地点：

6 月 24 日上午开幕式在华中科技大学东校区

创新研究院（恩明楼）205 会议室（和启明学院相连）。

校外到会场：从华中科技大学东校区原城建学院正门进入，离森林公园南大门很近。详情请参见校园图）。

酒店到会场：从宏嘉酒店出来，右手边道路下达喻园大道，往东九楼方向直走，到启明路，会场恩明楼就在启明学院旁。

住宿：

地点：湖北武汉武昌区喻家湖路78号，华中科技大学宏嘉酒店(湖北省博士后公寓对面，请参见校园地图)。

去往酒店路线：从珞喻路开往喻家湖路，一直到湖北省博士后公寓下车，对面就是华中科技大学宏嘉酒店。

酒店电话：　027-87792745

会务组：　杨文黛　13971383919　　周欣雨　15271907557

会议注册：

6月23号　8:00 am—9:00 pm　华中科技大学宏嘉酒店大厅

6月24号　8:00 am—9:00 pm　华中科技大学宏嘉酒店大厅

华中科技大学 乘车路线:

（1）乘高铁到武汉站：可乘513路公交车（首车06:30-末车17:30）到

珞喻路关山口下（华中科技大学南大门）。从武汉站乘出租车到华中科技大学南大门价位在40元人民币左右。

（2）乘火车到武昌站：可乘593、510、518路公交车到珞喻路关山口下（华中科技大学南大门，进门后有毛泽东雕像）（车程约50分钟左右）。从武昌站乘出租车到华中科技大学价位在30元人民币左右。

（3）乘火车到汉口站：可乘坐703路公交车在珞喻路关山口下（华中科技大学南大门），从汉口站乘出租车到华中科技大学价位在70元人民币左右。或是坐地铁二号线到达光谷广场，再打的或步行到达华中科技大学

（4）乘飞机到武汉天河机场：乘坐机场大巴武昌线（武汉天河机场-傅家坡长途客运站），到傅家坡长途客运站下车，在傅家坡长途汽车站可乘593、510、518、703、536路公交车到省中医院站下车站过马路（华中科技大学南三门进直行500米苹果体验店左拐50米即到六号楼）下车（车程约40分钟左右）；或直接从付家坡长途汽车站出发坐出租车，约30元左右。

（5）到达华中科技大学后，可继续乘坐校内车或步行去往华中科技大学宏嘉酒店（详情参见校园地图）。

PROGRAM

June 24， 2016

9:00-9:30 am Opening session & group photo Chair: Jinqiao Duan

Morning Session I Chair: Honjun Gao

9:45-10:15 am Paoliu Chow (Wayne State University)

Title: Unbounded Solutions of Stochastic Nonlinear Parabolic Equation

10:15-10:30 am Tea Break

10:30-11:00 am Shizan Fang (Universite de Bourgogne, France)

Title: Probabilistic aspects of Navier-Stokes equations

11:00-11:30 am N. D. Cong (Vietnam Academy of Science and Technology)

Title: Fractional Lyapunov exponents for solutions of linear fractional differential equations

June 24， 2016

Afternoon Session I Chair: Meihua Yang

2:00-2:30 pm Yaozhong Hu (University of Kansas, USA)

Title: Stochastic heat equation driven by time-fractional noise with H in (0,1/2)

2:30-3:00 pm Yong Xu: Open problems

3:00-3:20 pm Tea Break

Afternoon Session II **Chair: Jianhua Huang**

3:20-3:50 pm Xicheng Zhang (Wuhan University)

Title: Stochastic Hamiltonian flows with singular coefficients

3:50-4:20 pm Lin Lin (Nanijng Normal University)

Title: 2D stochastic generalized Ginzburg-Landau equation driven by jump noise

4:20-5:20 pm Guangying Lv: Open problems

June 25， 2016

Morning Session I **Chair: Jicheng Liu**

8:30 -9:30 am Linshan Wang

Title: Global Well-posedess and Stability of the Mild Solutions for a Class of Stochastic Partial Functional Differential Equations

9:00-9:30 am Zhao Dong (Academy of Mathematics and Systems Science, Chinese Academy of Sciences)

Title: TBA

9:30-9:50 am Tea Break

Morning Session II **Chair: Wei Wu**

9:50-10:20 am Guolian Wang (Tongji University)

Title: The Free Boundary Problems in Pricing Retirement Benefits

10:20-10:50 am Guanggan Chen (Sichuan Normal University)

Title: Slow foliation of a slow–fast stochastic evolutionary system

10:50-11:20 am Wei Yan: Open problems

June 25， 2016

Afternoon Session I **Chair: Mei Li**

2:00-2:30 pm Yanbin Tang (Huazhong University of Science and Technology)

Title: Value function regularity in option pricing problems under a pure jump model

2:30-3:00 pm Qi Zhang (Fudan University)

Title: Mass-Conserving Stochastic Partial Differential Equations and Related Backward Doubly Stochastic Differential Equations

3:00-3:20 pm Tea Break

Afternoon Session II **Chair: Chujin Li**

3:20-3:50 pm Jing Wang (U of Illinois, USA)

Title: Heat kernel estimates on Riemann manifolds

3:50-4:20 pm Yue Wu (Xi'an Jiaotong Liverpool University)

Title: Anticipating random periodic solutions of stochastic (partial) differenatil equations with multiplicative noise

4:20-5:20 pm Wei Wang: Open problems

6:30-21:00 pm Banquet

June 26， 2016

Morning Session I **Chair: Yicheng Liu**

8:30-9:00 am Huizhong Zhao (Loughborough University)

Title: Ergodicity of Random Periodic Processes and Periodic Measures

9:00-9:30 am Yongsheng Li (South China University of Technology)

Title: TBA

9:30-9:50 am Tea Break

Morning Session II **Chair: Chengfeng Sun**

9:50-10:20 am Yong Chen (Zhejiang Sci-Tech University)

Title: Well-posedness and large deviations for a class of SPDEs with Levy noise

10:20-10:50 am Chunxiao Guo (China University of Mining &Technology, Beijing)

Title: TBA

10:50-11:20 am Xueke Pu: Open problems

June 26， 2016

Afternoon Session I **Chair: Xiaopeng Chen**

2:00-2:30 pm Jianwei Shen (Xuchang University)

Title: Control method of reaction diffusion system and its application in biological systems

2:30-3:00 pm Fuke Wu (Huazhong University of Science and Technology)

Title: TBA

3:00-3:20pm Tea Break

Afternoon Session II **Chair: Yanfeng Guo**

3:20-3:50 pm Desheng Yang (Central South University)

Title: TBA

3:50-4:20 pm Xianming Liu (Huazhong University of Science and Technology)

Title: Approximation Random Sets of Stochastic Partial Differential Equations: A Wong-Zakai Approximation Approach

4:20-5:20 pm Ji Li: Open problems

Abstracts

Slow foliation of a slow–fast stochastic evolutionary system

Guanggan Chen

Sichuan Normal University

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Abstract: This work is concerned with the dynamics of a slow–fast stochastic evolutionary system quantified with a scale parameter. An invariant foliation decomposes the state space into geometric regions of different dynamical regimes, and thus helps understand dynamics. A slow invariant foliation is established for this system. It is shown that the slow foliation converges to a critical foliation (i.e., the scale parameter is zero) in probability distribution, as the scale parameter tends to zero. The approximation of slow foliation is also constructed with error estimate in distribution. Furthermore, the geometric structure of the slow foliation is investigated: every fiber of the slow foliation parallels each other, with the slow manifold as a special fiber. In fact, when an arbitrarily chosen point of a fiber falls in the slow manifold, the fiber must be the slow manifold itself. This work is jointed with Prof. Jinqiao Duan and Prof. Jian Zhang

Fractional Lyapunov exponent for solutions of linear fractional differential equations

Nguyen Dinh Cong

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Abstract： We investigate the asymptotic behavior of solutions of linear fractional differential equations. Firstly, we show that the classical Lyapunov exponent of an arbitrary nontrivial solution of a bounded linear fractional differential equation is always nonnegative. Next, using the Mittag-Leffler function, we introduce an adequate notion of fractional Lyapunov exponent for an arbi-trary function. We show that for a linear fractional differential equation, the fractional Lyapunov spectrum which consists of all possible fractional Lya-punov exponents of its solutions provides a good description of asymptotic behavior of this equation. Consequently, stability of a linear fractional dif-ferential equation can be characterized by its fractional Lyapunov spectrum. We will also give a description of the structure of the fractional Lyapunov spectrum for linear fractional differential equations.

Unbowed Solution of Stochastic Nonliueal Equation Parabolic

Paoliu Chow

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Well-posedness and large deviations for a class of SPDEs with Levy noise

Yong Chen

Zhejiang Sci-Tech University

Email address: youngchen329@126.com

Abstract： In this paper, a class of stochastic partial differential equations (SPDEs) with Levy noise is concerned. Firstly, the local well-posedness for this equation is established by iterative approximation. Then the large deviation principle (LDP) for the regularized SPDEs is obtained by the weak convergence approach. To get the LDP for SPDEs which we considered here, an exponentially equivalent of the probability measures is proved. The results can be used to some types of SPDEs such as stochastic Burgers equation, stochastic b-family equation, stochastic modified Novikov equation and stochastic μ-Hunter-Saxton equation.

Probabilistic aspects of Navier Stokes equations

Shizan Fang

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Stochastic heat equation driven by time-fractional noise with $H\in (0,1/2)$

Yaozhong Hu

University of kansas

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Abstract:

We will present some results concerning the following stochastic heat equation subject to a noise which is rougher than the white noise in time,

$$\begin{cases} \frac{\partial}{\partial t}u(t,x) = \frac{1}{2}\Delta u(t,x) + u(t,x)\frac{\partial}{\partial t}W(t,x), \quad t>0, x\in\mathbb{R}^d, \\ u(0,x) = u_0(x), \end{cases} \tag{1}$$

where u_0 is a bounded measurable function and $W=\{W(t,x),\ t\geq 0, x\in \mathbb{R}^d\}$ is a family of fractional Brownian motions of Hurst parameter $H\in(0,1/2)$ in time with spatial covariance $Q(x,y)$:

$$\mathbb{E}\left[W(t,x)W(s,y)\right] = \frac{1}{2}\left(t^{2H}+s^{2H}-|t-s|^{2H}\right)Q(x,y).$$

We assume that $Q(x,y)$ satisfies the following two conditions:

1. For some constant $C_0>0$ and some $\alpha\in(0,1]$,
$$Q(x,x)+Q(y,y)-2Q(x,y)\leq C_0|x-y|^{2\alpha}, \quad \text{for all } x \text{ and } y\in\mathbb{R}^d. \tag{H1}$$
2. For some $\beta\in[0,1)$, there exists a constant $C_2>0$ such that for all $M>0$,
$$Q(x,y)\geq C_2 M^{2\beta}, \qquad \text{for all } x,\ y\in\mathbb{R}^d \text{ with } x_i,\ y_i\geq M,\ i=1,\dots,d. \tag{H2}$$

The first result is the following Feynman-Kac formula for the solution under the conditions $0<H<1/2$ and $2H+\alpha>1$:

$$u(t,x) = \mathbb{E}^B\left[u_0(B_t^x)\exp\int_0^t W(ds, B_{t-s}^x)\right], \tag{2}$$

where $B=\left\{B_t^x = B_t + x,\ t\geq 0, x\in\mathbb{R}^d\right\}$ is a d-dimensional Brownian motion starting from $x\in\mathbb{R}^d$, independent of W, and the expectation is with respect to the Brownian motion. Using this formula we are able to show that for some nonnegative constants $\overline{C}$ and $\underline{C}$, the solution to (1) satisfies the following moment bounds

$$\underline{C}\exp\left(\underline{C}k^{\frac{2-\beta}{1-\beta}}t^{\frac{2H+\beta}{1-\beta}}\right)\leq \mathbb{E}\left[u(t,x)^k\right]\leq \overline{C}\exp\left(\overline{C}k^{\frac{2-\alpha}{1-\alpha}}t^{\frac{2H+\alpha}{1-\alpha}}\right) \tag{3}$$

for large t and k, where condition (H2) is only used for the lower bound. When $\alpha = \beta$ our exponents in (4) are sharp in the sense that

$$\underline{C}\exp\left(\underline{C}k^{\frac{2-\alpha}{1-\alpha}}t^{\frac{2H+\alpha}{1-\alpha}}\right) \leq \mathbb{E}\left[u(t,x)^k\right] \leq \overline{C}\exp\left(\overline{C}k^{\frac{2-\alpha}{1-\alpha}}t^{\frac{2H+\alpha}{1-\alpha}}\right) \quad (4)$$

provided that u_0 is bounded and $\inf_{x\in\mathbb{R}^d} u_0(x) > 0$.

2D stochastic generalized Ginzburg-Landau equation driven by jump noise.

Lin Lin

Email address: linlin@njnu.edu.cn

Abstract: 2D stochastic generalized Ginzburg-Landau equation driven by a multiplica- tive jump noise is considered. By the prior estimates, weak convergence and monotonicity technique, we prove the existence and uniqueness of the solution. Here we need to point out that, for the generalized Ginzburg-Landau equation, such a locally monotonic con- dition of the nonlinear term is no longer automatically satisfied. For this, we utilize the characteristic structure of nonlinear term and dedicated analysis to cover this gap.

Approximation Random Sets of Stochastic Partial Differential Equations: A Wong-Zakai Approximation Approach

Xianming Liu

Huazhong University of Science and Technology

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Abstract: We use the Wong-Zakai approximation to examine the random attractor for classes of stochastic partial differential equations (SPDEs) and random invariant manifolds of stochastic evolutionary equations.

Control method of reaction diffusion system and its application in biological systems

Jianwei Shen

Email address: xcjwshen@yahoo.com

Value function regularity in option pricing problems under a pure jump model

Yanbin Tang

Email address: tangybhust@sina.com

Abstract: In this paper, we consider an option pricing problem in a pure jump model where the process $X(t)$ models the logarithm of the stock price. By the Schauder fixed point theorem, we show the existence and uniqueness of the solutions in H$\ddot{o}$lder spaces for the European and American option pricing problems respectively. Due to the estimates of fractional heat kernel, we give the regularity of the value functions $u_{E}(t,x)$ and $u_{A}(t,x)$ of the European option and the American option respectively. This is a joint work with Kang Junjun.

The Free Boundary Problems in Pricing etirement Benefits

Guolian Wang

Email address: wangguolian@126.com

Title: Heat kernel estimates on Riemann manifolds

Jing Wang (U of Ilinois, USA)

Email: wangjing@illinois.edu

Global Well-posedess and Stability of the Mild Solutions for a Class of Stochastic Partial Functional Differential Equations

Linshan Wang

Email address: wangls@ouc.edu.cn

Abstract： The aim of this paper is to develop some theories of stochastic partial functional differential equations (SPFDEs) driven by infinite dimensional Wiener processes under the quasi-local Lipschitz condition and the restriction growth condition. Firstly, we establish the existence-uniqueness theorem of the global mild solutions for SPFDEs by using the intercept technique. Then, we discuss asymptotic behavior of the solutions. Furthermore, some criteria of exponential stability in the mean square are obtained by using Lyapunov method. An example is provided to show the effectiveness of the theoretical results.

Anticipating random periodic solutions of stochastic (partial) differenatil equations with multiplicative noise

Yue Wu

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Ergodicity of Random Periodic Processes and Periodic Measures

Huaizhong Zhao

Email address: H.Zhao@lboro.ac.uk

Abstract: An ergodic theorem in the random periodic regime on a Polish space are proved. In the Markovian random dynamical systems case, the idea of Poincare sections is introduced and under ergodic assumption of the discrete time semigroup at multiple integrals of the period (PS-ergodic), the ergodicity of the periodic measure is obtained. The distinction between random periodic and stationary regimes is characterised by the spectral structure of the infinitesimal generators of the Markov semigroups. It is asserted that if infinitesimal generator has only $\{{2m\pi \over \tau}i\}_{m\in Z}$ as its simple eigenvalues on the imaginary axis, then the minimum period of the periodic measure is τ and the periodic measure is ergodic. In the meantime, the generator has only one simple eigenvalue 0 on the imaginary axis if and only if it is in the mixing stationary case. The latter agrees with what the classical Koopman-von Neumann theorem suggests. We also prove that the spectral gap of the semigroup on Poincare sections gives the exponential convergence of the mean of transition probability to the mean of the periodic measure over one period and therefore the periodic measure is PS-mixing. This is a joint work with Chunrong Feng.

Mass-Conserving Stochastic Partial Differential Equations and Related Backward Doubly Stochastic Differential Equations

Qi Zhang

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Abstract： In this talk, we will study a type of mass-conserving stochastic partial differential equations which can be connected with a type of mass-conserving backward doubly stochastic differential equations. The Poincare's inequality is used in the estimates to relax the monotonic condition of backward doubly stochastic differential equations.

List of Conference Participants

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48	Wei Zou	华中科技大学	
49	Mike Zhang	华中科技大学	
50	Meihong Qiao	华中科技大学	
51	Hua Zhang	华中科技大学	
52	Lu Bai	华中科技大学	
53	Rui Cai	华中科技大学	

54	Xiaoli Chen	华中科技大学	
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64	Hui Wang	华中科技大学	
65	Pingyuan Wei	华中科技大学	
66	Wei Wei	华中科技大学	
67	Xiao Wang	华中科技大学	
68	Shenglan Yuan	华中科技大学	
69	Ao Zhang	华中科技大学	
70	Yanjie Zhang	华中科技大学	
71	Yayun Zheng	华中科技大学	
72	Yiling Chen	华中科技大学	
73	Huanghuang Wang	华中科技大学	
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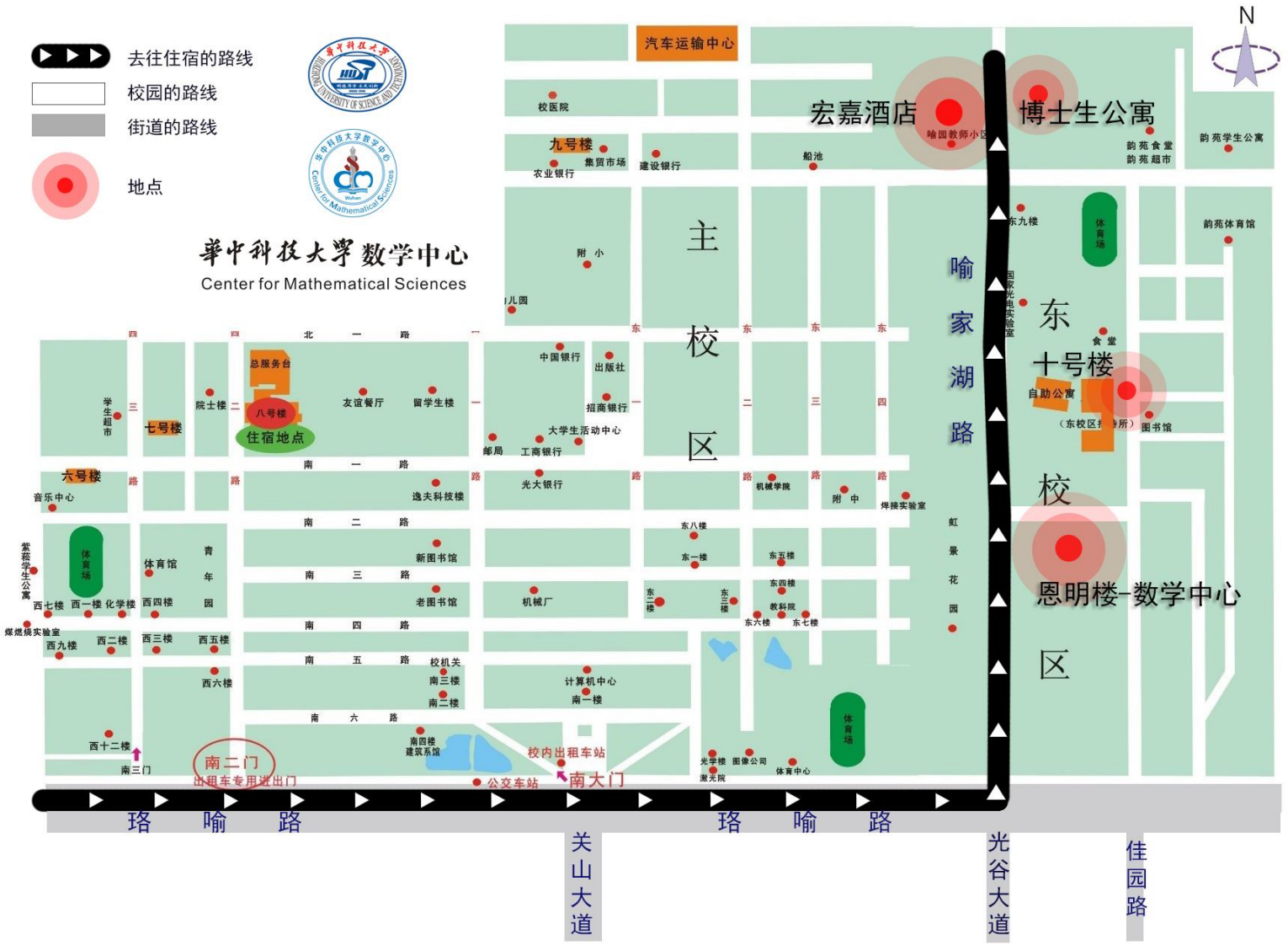
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地点
華中科技大學数学中心
Center for Mathematical Sciences
N
汽车运输中心
校医院
九号楼
农业银行
集贸市场
建设银行
船池
宏嘉酒店
喻园教师小区
博士生公寓
韵苑食堂
韵苑超市
韵苑学生公寓
主校区
喻家湖路
东九楼
体育场
韵苑体育馆
附小
儿园
国家光电实验室
东校区
食堂
自助公寓
（东校区招待所）
图书馆
恩明楼-数学中心
总服务台
八号楼
住宿地点
友谊餐厅
留学生楼
中国银行
出版社
招商银行
大学生活动中心
邮局
工商银行
学生超市
七号楼
院士楼
六号楼
音乐中心
光大银行
逸夫科技楼
机械学院
附中
焊接实验室
北一路
南一路
南二路
南三路
南四路
南五路
南六路
东八楼
东一楼
东五楼
东四楼
教科院
东六楼
东七楼
东二楼
东三楼
虹景花园
新图书馆
老图书馆
机械厂
计算机中心
南一楼
校机关
南三楼
南二楼
南四楼
建筑系馆
紫薇学生公寓
体育馆
青年园
西七楼
西一楼
化学楼
西四楼
煤燃烧实验室
西九楼
西二楼
西三楼
西五楼
西六楼
西十二楼
南三门
南二门
出租车专用进出门
校内出租车站
南大门
公交车站
光学楼
激光院
图像公司
体育中心
珞喻路
关山大道
光谷大道
佳园路

华中科技大学数学与统计学院简介

华中科技大学数学与统计学院始建于 1953 年，经历了由数学教研室、数学系到数学与统 计学院的发展历程。在老一辈数学家林少宫、徐利治、陈庆益、黄志远等的带领下，经过数学与统计学院几代人的艰苦努力，先后于 1981 年获得应用数学硕士 点、1990 年获得计算数学硕士点、1993 年获得概率论与数理统计硕士点、1998 年获得概率论与数理统计博士点。首个博士点的取得，使数学与统计学院 的学科建设实现了一次质的飞跃。继而，1999 年获得基础数学硕士点、2001 年获得数学博士后流动站、2005 年获得数学一级学科硕士点、2011 年获 得数学一级学科博士点，其涵盖了基础数学、计算数学、应用数学、概率论与数理统计和运筹学与控制论五个二级学科。在学科授权点建设的同时，数学与统计学院也先后建立了数学与应用数学、信息与计算科学、统计学三个本科专业。至此，数学与统计学院的学科建设已初具规模。学院现有在校学生 668 人，其中本科生 439 人、硕士生 174 人，博士 55 人。

目前，数学与统计学院共有教职工 110 人，在编教师 93 人，其中外聘中科院院士 1 人、教授 20 人(含博士生导师 13 人)、副教授 37 人。教师中有博士学位者约占 70%，其中 7 人分别获批教育部“长江讲座教授”、“高校青年教师奖”、“新世纪优秀人才支持计划”和“跨世纪优秀人才资助计划”等高层次人才计划项目，4 人分别获批“湖北省有突出贡献中青年专家”及“湖北省楚天学者”，1 人获批“国家杰出青年科学基金”， 1 人获批“国家优秀青年科学基金”,1 人入选人事部“新世纪百千万人才工程”国家级人选，7 人享受国务院政府特殊津贴，4 人获批“宝钢优秀教师奖”。学院重视人才培养工作，现有“复变函数”、“计算方法”两门国家精品课程，“复变函数”、“计算方法”、“微积分”、“概率论与数理统计”、“数学分析”5 门省级精品课程。近年来，学院获得省部级教学、科研成果奖 5 项，全国优秀博士论文提名奖 2 名，并在全国大学生数学竞赛与数模竞赛中取得优异成绩。学院科研力量雄厚，拥有随机分析、数理统计、动力系统、分形几何、微分方程理论及其应用、金融数学、应用泛函分析、微分方程数值解、复杂系统建模与仿真、小波分析与图像处理等研究方向。近五年来，数学与统计学院的学术团队共获科研经费 1000 余万元，获批国家自然科学基金 32 项，发表 SCI 收录论文 260 余篇，出版各类专著、教材 30 余本。多次在全国大学生数学竞赛与数模竞赛中取得优异成绩。

在华中科技大学历届领导的支持下，经过几代人的努力，数学与统计学院在学科建设、科学研 究、人才培养等方面取得了长足进步，数学各二级学科得以均衡发展。随着科学技术的日新月异，数学学科正面临着新的机遇和挑战，面对这机遇与挑战，我们热忱欢迎海内外专家学者与我们一起携起手来，共同创造光辉灿烂的明天。

Center for Mathematical Sciences

Huazhong University of Science and Technology, Wuhan, China

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Center for Mathematical Sciences, at Huazhong University of Science and Technology, Wuhan, China, is a mathematical research and education institution. Its mission is to promote interactions between mathematics and other disciplines, and to connect branches of mathematics. The Center fulfills its mission by conducting select research and educational activities, including short courses, workshops, mini-workshops, and topic conferences.

华中科技大学数学中心

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数学作为一门基础学科，一直在背后推动着科学和工程技术的进步，为现代科学和高新技术的发展奠定基础。通讯与网络安全，金融市场与风险，国防和国家安全，无不与数学紧密相关。科学技术史和当代科技发展趋势明确无误地告诉我们：科技强国必定是数学强国，而现代高科技竞争同时包含数学研究的竞争。本中心宗旨：一方面积极倡导数学不同分支之间的相互交叉研究，激发新的合作研究，并催生新的研究领域和研究群体。另一方面，努力推动数学与科学、工程、医学、经济与金融学之间的相互交叉研究，引导数学家和科学家之间建立起广泛的联系，从对方的研究活动中吸取养分和获取动力，从而达到合作共赢。本中心和华中科技大学数学与统计学院并其它院系，兄弟院校以及科研机构紧密合作，促进数学、应用数学与统计学的发展。在这个过程中，努力培养和吸引优秀人才，服务国家和社会。

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