

Workshop of Operator Spaces, Quantum Probability and its applications

(5-7th June, 2015)

Date Time	Friday	Saturday	Sunday
8:50 -- 9:35	<i>Registration in Hotel</i>	Chunlan Jiang	Zeqian Chen
9:40 -- 10:25		Shangquan Bu	Shunlong Luo
10:25 -- 10:55		 Coffee Break	
10:55 -- 11:40		Yufeng Lu	Junde Wu
11:45 -- 12:25		Tao Yu	Maofa Wang
12:30 -- 13:20		Lunch in Meiyuan	
15:00 -- 15:45		Lixin Cheng	Refreshment
15:45 -- 16:15		 Coffee Break	
16:15 -- 17:00		Junsheng Fang	
17:05 -- 17:50		Tiexin Guo	
19:00 -- 21:30	Dinner		

Workshop on Operator Spaces, Quantum Probability and its applications

Wuhan University, 5-7 June 2015

SCHEDULE

Friday, June 5th

- Registration in Jun Yi Dynasty Hotel during the whole day
- 19:00: Dinner in Jun Yi Dynasty Hotel

Notice:

- ▶ Mini-Bus transportation between Hotel, Restaurant and Conference room (3rd floor of Math dept of WHU) is prepared for you every time:
 - **Hotel** → **Conference room** at 8:30 in the morning (at the lobby of the hotel)
 - **Mei Yuan** → **Hotel** at 13:20 after lunch for those who wish to have a brief rest in their room
 - **Hotel** → **Conference room** at 14:40

The 1st report in the morning start at **08:50**.

- ▶ The hotel is located on the southern border of the campus. The walking distance from the hotel to School of Mathematics and Statistics is about 25 minutes.

Saturday

- 8:30** **Departure from Hotel by Mini-bus**
- 8:50 - 9:35** **Chunlan Jiang** (Hebei Normal University): Classification of C^* algebras that have ideal properties
- 9:40 - 10:25** **Shangquan Bu** (Tshinghua University): Well-posedness of second order differential equations in Banach spaces
- 10:25 - 10:55** **Coffee break and take photos**
- 10:55 - 11:40** **Yufeng Lu** (Dalian University of Technology): Commutativity of Toeplitz Operators in Several Variables
- 11:45 - 12:25** **Tao Yu** (Dalian University of Technology): Algebraic Properties of Toeplitz operators on Multi-disc Hardy space
- 12:30** **Lunch in Meiyuan**
- 13:20** **Return back to Hotel by Mini-bus**
- 14:40** **Departure from Hotel by Mini-bus**
- 15:00 - 15:45** **Lixin Cheng** (Xiamen University): A universal theorem for stability of ε -isometries of Banach spaces
- 15:45 - 16:15** **Coffee break**
- 16:15 - 17:00** **Junsheng Fang** (Dalian University of Technology): A class of operators in Hyper-finite II-1 Factors
- 17:05 - 17:50** **Tiexin Guo** (Central South University): Stochastic metric theory and its applications

Sunday

- 8:30** **Departure from Hotel by Mini-bus**
- 8:50 - 9:35** **Zeqian Chen** (Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences):
Atomic decomposition for noncommutative martingales
- 9:40 - 10:25** **Shunlong Luo** (Academy of Mathematics and Systems Science, National Center for Mathematics and Interdisciplinary Sciences, Chinese Academy of Sciences): Fisher Information
- 10:25 - 10:55** **Coffee break**
- 10:55 - 11:40** **Junde Wu** (Zhejiang University): PT-Symmetry
- 11:45 - 12:25** **Maofa Wang** (Wuhan University): Composition operators on Hilbert space of Dirichlet series
- 12:30** **Lunch in Meiyuan**
- 13:20** **Return back to Hotel by Mini-bus**
- 15:00 - 17:00** **Refreshment**

List of abstracts

- 1) **Zeqian Chen:** Atomic decomposition for noncommutative martingales

Abstract: In this talk, we will report that any $(p, 2)$ -atom of noncommutative martingale in little Hardy spaces \mathbf{h}^p ($0 < p \leq 1$) can be represented by a sequence of (p, ∞) -atoms with the coefficients being summable.

- 2) **Lixin Cheng:** A universal theorem for stability of ε -isometries of Banach spaces

Abstract: In this talk, we first present a historical overview of the study of properties of both isometries and ε -isometries defined on Banach spaces; then introduce a recent theorem of ours about stability of ε -isometries:

Let f be a standard ε -isometry from a Banach space X to another Banach space Y . Then for all $x^* \in X^*$ there is $\varphi \in X^*$ with $\|\varphi\| = \|x^*\| \equiv r$ so that

$$|\langle x^*, x \rangle - \|\varphi, f(x)\rangle| \leq 2\varepsilon r, \text{ for all } x \in X.$$

This theorem is not only a sharp quantitative stability version for general ε -isometries, but it also unifies a number of well-known results such as the Mazur-Ulam theorem (1932), the Figiel theorem (1968) and Omlandic-Semrl theorem (1995), generalizes and improves a series of existing results, proves some new results, and answers some open problems in this area.

- 3) **Junsheng Fang:** A class of operators in Hyper-finite II-1 Factors

Abstract: In this talk, we will introduce the spectrum, Brown spectrum and the invariant spaces of a class of operators in Hyper-finite II-1 Factors, plus the structure of the generated Von Neumann Algebra and C^* Algebra.

- 4) **Tiexin Guo:** Stochastic metric theory and its applications

Abstract: In this talk, we will introduce the history, developing process and the latest progress of Stochastic metric theory and its applications.

- 5) **Shunlong Luo:** Fisher Information

Abstract: Fisher information is a very basic and important concept in Probability and Statistics Theory, which has a very deep essence and extensive applications. This report will introduce the origin, background and properties of classical and quantum Fisher information, plus some of its applications in mathematics, statistics and physics.

- 6) **Maofa Wang:** Composition operators on Hilbert space of Dirichlet series

Abstract: In this talk, we will comprehensively study various properties of composition operators on the Hilbert space of Dirichlet series with square summable coefficients.

- 7) **Tao Yu:** Algebraic Properties of Toeplitz operators on Multi-disc Hardy space

Abstract: We discuss about Toeplitz operators on Multi-disc Hardy space, we use Berezin transform method, give some equivalent conditions about when the finite sum of Toeplitz products like $\sum_{m=1}^M T_{f_m} T_{g_m}$ equals 0. We also give some generalizations of classical results of this question.

List of Participants

- 1) Ping Ai (Wuhan University; 834923633@qq.com)
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