Weihua Liu

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Research interests: In general: Functional analysis, Quantum Theory.
In specific: Operator algebras, Free Probability Theory, Random Matrices, Probabilistic symmetry, Quantum groups.

Education:

University of California, Berkeley	2010-present

Advisor:Dan-Virgil Voiculescu

Zhejiang University	2008-2010

Master in Science
Advisor:Junde Wu
Thesis:On some problems of quantum measurement

Zhejiang University	2004-2008

Bachelor in Science
Advisor:Junde Wu

Publications:

1. with Junde Wu, A representation theorem of infimum of bounded quantum observables. J. Math. Phys. 49 (2008).

2. with Junde Wu, A uniqueness problem of the sequence product on operator effect algebra $\epsilon(H)$.J.Phys. A: Math. Theor. 42 (2009).

3. with Junde Wu, On fixed points of Luders operation. J. Math. Phys. 49 (2009).

4. with Junde Wu, On supremum of bounded quantum observable. J. Math. Phys. 49 (2009).

5. with Junde Wu, The fixed point sets of a class of quantum operations. J. Phys. A: Math. Theor. 43 (2010).

6. A noncommutative De Finetti theorem for boolean independence, J. Funct. Anal. 269 (2015).

7. Extended de Finetti theorems for boolean independence and monotone independence, (46 pages) arXiv:1505.02215(submitted).

8. On noncommutative symmetries and de Finetti theorems associated with them, (28 pages) arXiv:1511.05651

Awards:

Birkhoff - von Neumann Prize by IQSA(International Quantum Structure Association)   2014
Awarded for outstanding scientific achievements in the field of quantum structures and the impact their work has on the research in quantum logic and quantum foundations.

Outstanding GSI Award   2014
Awarded for Graduate Student Instructors who have been nominated for excellence in teaching in their departments(Math department).

New World Mathematics Golden Award for the Master Thesis   2010

Awarded for outstanding Master thesis of Chinese students all over the world.
(at most one per year)

Tecent Excellence Prize in Technology and Science   2010

Teaching:	**University of California, Berkeley**	
	Instructor:	
	• Math 128A: Numerical Analysis	2014 Summer
	Graduate Student Instructor:	
	• Math 128A:Numerical Analysis	2014 Fall
	• Math 16B: Analytic Geometry and Calculus	2013 Fall
	• Math 53:Multivariable Calculus	2012 Fall
	• Math 1B:Numerical Analysis	2012 Spring & 2013 Spring

Conference Attended and Talks:

- Quantum Structures Brussels-Gdansk   2008
  Conference Talk: Remarks on the Infimum Problem of Hilbert Space Observables
- Pseudo-Hermitian Hamiltonians in Quantum Physics IX,   2010
- Bialgebras in Free Probability   2011
- Free probability and the large N limit, III   2012
- Focus Program on Noncommutative Distributions in Free Probability Theory 2013
- Free probability and the large N limit, IV   2014
- Summer school Quantum Information and Quantum Compute in Zhejiang University   2014
  Conference Talk: A noncommutative De Finetti theorem for boolean independence
- Free Probability Concentration Week   2014
  Conference Talk: A noncommutative De Finetti theorem for boolean independence
- Extended Probabilistic Operator Algebras Seminar   2015
  Conference Talk: Extended de Finetti theorems for boolean independence and monotone independence
- George Boole Mathematical Sciences Conference   2015
  Conference Talk: Extended de Finetti theorems for boolean independence and monotone independence

Technical Skills   : C, Matlab, Latex