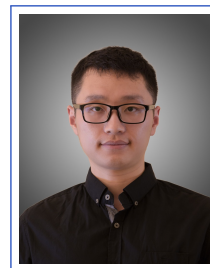


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PERSONAL INFORMATION

- Time of birth: June 1993
- Place of Birth: Changzhou, Jiangsu, China
- Nationality: Chinese

RESEARCH INTERESTS

Quantum Shannon Theory, Entanglement Theory, Optimization Theory, Quantum Computation, Quantum Cryptography, Gaussian Quantum Information.

EDUCATION

- 2014–2018 **Ph.D. in Quantum Information, University of Technology Sydney.**
Supervisors: Prof. Runyao Duan and Prof. Andreas Winter (external, UAB)
- 2010–2014 **Bachelor in Mathematics, Sichuan University, Wu Yuzhang Honors College and Mathematics Department.**

REFEREED CONFERENCE TALKS

The Conference on Quantum Information Processing (QIP) is the most competitive and important conference in quantum information science (4 talks accepted). AQIS is an international leading conference (2 long talks+5 short talks accepted) and ISIT is the main event in information theory (3 talks accepted). In the following list, (*) indicates delivery by my co-author.

- 01/2018 **QIP 2018**, *On converse bounds for classical communication over quantum channels*, QuTech, Delft, Netherlands.
- 01/2018 **QIP 2018**, *Efficiently computable upper bounds for quantum communication*, QuTech, Delft, Netherlands.
- 01/2017 **QIP 2017**, *Asymptotic entanglement manipulation under PPT operations: new SDP bounds and irreversibility*, Microsoft Research, Redmond, USA.
- 01/2017 **QIP 2017**, *Semidefinite programming strong converse bounds for quantum channel capacities*, Microsoft Research, Redmond, USA.
- 09/2017 **AQIS 2017** (long talk), *Irreversibility of Asymptotic Entanglement Manipulation Under PPT-preserving Operations*, NUS, Singapore.
- *09/2017 **AQIS 2017** (long talk), *Non-asymptotic entanglement distillation*, NUS, Singapore.
- *09/2017 **AQIS 2017**, *SDP converse for quantum communication*, NUS, Singapore.

- *09/2017 **AQIS 2017**, *Approximate broadcasting of quantum correlations*, NUS, Singapore.
- 06/2017 **ISIT 2017**, *Semidefinite programming converse bounds for classical communication over quantum channels*, RWTH Aachen University, Aachen.
- 08/2016 **AQIS 2016**, *Separation between quantum Lovász number and entanglement-assisted zero-error classical capacity*, Academia Sinica, Taipei.
- *08/2016 **AQIS 2016**, *Improved Semidefinite Programming Upper Bound on Distillable Entanglement and Non-additivity of Rains' Bound*, Academia Sinica, Taipei.
- *08/2016 **AQIS 2016**, *Tripartite-to-bipartite entanglement transformation by SLOCC and the classification of matrix spaces*, Academia Sinica, Taipei.
- 07/2016 **ISIT 2016**, *A semidefinite programming upper bound of quantum capacity*, Barcelona.
- 07/2016 **ISIT 2016**, *On the quantum no-signalling assisted zero-error simulation cost of non-commutative bipartite graphs*, Barcelona.

INVITED AND WORKSHOP TALKS

- 11/2017 *Evaluating communication capabilities of quantum channels*, International Workshop on Quantum Computing and Quantum Information Processing 2017, AMSS, Beijing.
- 07/2017 *Semidefinite programming strong converse bounds for quantum channel capacities, Beyond i.i.d.* in Information Theory Workshop, NUS, Singapore.
- 06/2017 *Semidefinite programming strong converse bounds for quantum channel capacities*, Quantum Information Seminar, Southern University of Science and Technology, Shenzhen.
- 12/2015 *Activated zero-error classical capacity of quantum channels in the presence of quantum no-signalling correlations*, Sydney Quantum Information Theory Workshop, UTS, Sydney.

PUBLICATIONS

I have 7 papers published in refereed journals, 3 papers published in peer-reviewed conference proceedings and 7 preprint papers.

PEER-REVIEWED JOURNAL ARTICLES

- (J1) **X. Wang**, W. Xie, and R. Duan, *Semidefinite programming strong converse bounds for classical capacity*, IEEE Transactions on Information Theory 63, 1-14, (**Contributed talk QIP 2017**).
- (J2) **X. Wang** and R. Duan, *Irreversibility of Asymptotic Entanglement Manipulation Under Quantum Operations Completely Preserving Positivity of Partial Transpose*, Physical Review Letters 119, 180506 (**Contributed talk QIP 2017**).
- (J3) **X. Wang** and R. Duan, *Improved semidefinite programming upper bound on distillable entanglement*, Physical Review A 94, 050301(R) (2016).
- (J4) **X. Wang** and R. Duan, *Nonadditivity of Rains bound for distillable entanglement*, Physical Review A 95, 062322 (2017).
- (J5) Y. Li, Y. Qiao, **X. Wang**, and R. Duan, *Tripartite-to-bipartite Entanglement Transformation by Stochastic Local Operations and Classical Communication and the Classification of Matrix Spaces*, accepted by Communications in Mathematical Physics on 11/11/2017.
- (J6) Y. Li, **X. Wang**, and R. Duan, *Indistinguishability of bipartite states by positive-partial-transpose operations in the many-copy scenario*, Physical Review A 95, 052346 (2017).

- (J7) W. Xie, K. Fang, **X. Wang**, and R. Duan, *Approximate broadcasting of quantum correlations*, Physical Review A 96, 022302 (2017).

PEER-REVIEWED CONFERENCE PROCEEDINGS

- (C1) **X. Wang**, W. Xie, and R. Duan, *Semidefinite programming converse bounds for classical communication over quantum channels*, Proceedings of the IEEE International Symposium on Information Theory (ISIT 2017).
- (C2) **X. Wang** and R. Duan, *A semidefinite programming upper bound of quantum capacity*, Proceedings of IEEE International Symposium on Information Theory (ISIT 2016).
- (C3) **X. Wang** and Runyao Duan, *On the quantum no-signalling assisted zero-error simulation cost of non-commutative bipartite graphs*, Proceedings of the IEEE International Symposium on Information Theory (ISIT 2016).

PREPRINTS

- (P1) **X. Wang** and R. Duan, *Separation between quantum Lovász number and entanglement-assisted zero-error classical capacity*, submitted to IEEE Transactions on Information Theory, available at arXiv:1608.04508.
- (P2) **X. Wang**, K. Fang, and M. Tomamichel, *On converse bounds for classical communication over quantum channels*, submitted to IEEE Transactions on Information Theory, available at arXiv:1709.05258, (**Contributed talk QIP 2018**).
- (P3) **X. Wang**, K. Fang, and R. Duan, *Semidefinite programming converse bounds for quantum communication*, submitted to IEEE Transactions on Information Theory, available at arXiv:1709.00200, (**Contributed talk QIP 2018**).
- (P4) K. Fang, **X. Wang**, M. Tomamichel, and R. Duan, *Non-asymptotic entanglement distillation*, submitted to Physical Review Letters, available at arXiv:1706.06221.
- (P5) R. Duan and **X. Wang**, *Activated zero-error classical capacity of quantum channels in the presence of quantum no-signalling correlations*, available at arXiv:1510.05437.
- (P6) B. Regula, K. Fang, **X. Wang**, and Gerardo Adesso, *One-shot coherence distillation*, available at arXiv:1711.10512.
- (P7) S. Liu, **X. Wang**, L. Zhou, J. Guan, Y. Li, Y. He, R. Duan, and M. Ying, *$Q|SI$: A Quantum Programming Environment*, available at arXiv:1710.09500. (This is the technique report of the software project " $Q|SI$: A Quantum Programming Environment".)

POSTER PRESENTATIONS

- 07/2016 BIID4, Workshop on "Beyond i.i.d. in information theory", Barcelona, *Asymptotic entanglement manipulation under PPT operations*.
- 01/2016 QIP2016, Banff, *On the quantum no-signalling assisted zero-error simulation cost of non-commutative bipartite graphs*.
- 01/2016 QIP2016, Banff, *Activated zero-error classical capacity of quantum channels in the presence of quantum no-signalling correlations*.

PROFESSIONAL SERVICE

Journal Referee IEEE Transactions on Information Theory.

- Conference Referee Asian Quantum Information Science Conference (AQIS), IEEE Information Theory Workshop (ITW), Conference on Quantum Information Processing (QIP).
- Conference organization Coordinator of QIP 2015 (Sydney) and International Workshop on Quantum Computing and Quantum Information Processing 2017 (Beijing).

AWARDS AND SCHOLARSHIPS

- 2017-2018 Faculty of Engineering and Information Technology Scholarship
- 2014-2017 Australian Research Council Discovery Scholarship
- 2014-2018 UTS International Research Scholarship
- 2011-2013 Comprehensive Merit Scholarship, Sichuan University
- 2011-2012 Excellent Student, Sichuan University

REFERENCES

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(more references available upon request)