16th Workshop on Quantum Information Processing

http://conference.iiis.tsinghua.edu.cn/QIP2013

Tsinghua University, Beijing, China
January 21-25, 2013
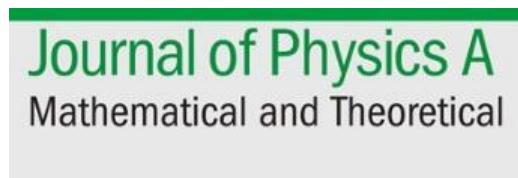
清華大学交叉信息研究院
Tsinghua University　Institute for Interdisciplinary Information Sciences

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Welcome Message

Dear Friends and Colleagues,

Welcome to Beijing, Welcome to Tsinghua University, Welcome to QIP 2013!

On behalf of the Local Organizing Committee, it is my great pleasure to say a few words about the local aspects of the conference and to bring to you this booklet, which I hope will help you to enjoy the conference program and to have a pleasant time in Beijing.

Hosting QIP in Beijing is a thrilling event in many respects. For our institution, the Institute for Interdisciplinary Information Sciences (IIIS) of Tsinghua University, QIP 2013 represents an important milestone. It is only two years ago that IIIS was established, under the leadership of Professor Andrew Chi-Chih Yao, with the aim of creating a new, internationally oriented habitat for the research and education of theoretical computer science and quantum information in China. Within this broad vision, the opportunity of organizing world's foremost conference on the theoretical aspects of quantum information is both a joy and a challenge. It is a joy, because QIP is gathering in Tsinghua an outstanding research community sharing the same interdisciplinary inspiration that guides IIIS. And it is a challenge, because of the organizational complexity of a conference like QIP, already non-trivial, is increased in a new environment. During this week, we hope that you will share with us the joy of this meeting in Beijing, and will be delighted by its shining scientific program.

For all of the challenges, both large and small, that the Organizing Committee had to face, the staff of our Institute has offered invaluable support, providing creative solutions and making the local interactions smoother than anyone could have ever expected. On the scientific side, I would like to extend a great thanks to the Steering Committee, chaired by Andrew Yao, for offering guidance and an outstanding list of plenary lecturers, and to the Program Committee, chaired by John Watrous, for the enormous amount of work put in selecting 33 contributed talks (9 of which have been selected as featured talks) out of 167 submissions, and 150 posters out of 170 submissions. When arranging the program, it has been wonderful to see how these talks, selected individually for their outstanding quality, have naturally fit together to offer a coherent picture of a strong and dynamic research community.

Before concluding, there are three important acknowledgements that I would like to make. First, I want to express the gratitude of the Organizing Committee to the sponsors of QIP 2013 for their generous support, which has been essential to making this conference possible. In particular, it is thanks to their generosity that we have been able to provide travel support to young participants of all nationalities. Second, I would like to thank the student volunteers who offered their help in organizing this conference—they will help you in getting oriented around the Tsinghua campus during this week. Last but not least, a great thanks goes to you, our distinguished guests, for coming to Tsinghua in so large a number and for enriching the conference with your participation.

Best wishes for a wonderful time in Beijing!

Giulio Chiribella

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Jia Ma (Tsinghua University)

Tao Qi (Tsinghua University)

Mengting Song (Tsinghua University)

Di Sun (Tsinghua University)

Yanping Wang (Tsinghua University)

Yan Zhang (Tsinghua University)

Table of Contents

General Information

Workshop Overview

Workshop Venue - Mong Man Wai Concert Hall (蒙民伟音乐厅), No. 1, Tsinghua Science Park,
Haidian District, Beijing, China
Monday, January 21, Friday, January 25, 2013
Note: Lunch will not be provided

Poster Sessions - Lecture Hall, New Tsinghua Xuetang (新清华学堂), Tsinghua Science Park,
Haidian District, Beijing, China
Monday, January 21, 2013, 17:00-19:30
Tuesday, January 22, 2013, 17:00-19:30

Conference Banquet - Holiday Inn (红杉假日酒店), No. 89, Shuangqing Road Haidian District, Beijing,
China
Wednesday, January 23, 2013, 18:00

Rump Session - Holiday Inn (红杉假日酒店)，No. 89, Shuangqing Road Haidian District, Beijing,
China
Thursday, January 24, 2013, 19:00

Instructions for Speakers

All speakers should provide their presentations before the start of the break taking place before their session. There will be one PC and one Mac from which your presentation can be shown. The 5 minutes between talks is only used for the transition between speakers. If your talk takes place in the first morning session then your presentation should be provided before 8:00 a.m. If your talk is scheduled in the first afternoon session then it should be provided before 1:00 p.m. Please send us your presentation at qip2013@iiis.tsinghua.edu.cn.

Business Meeting

The business meeting is open to all participants to the conference. This is where the community can influence future QIP conferences. The organizers of the next QIP will present their venue and proposals for the following QIP conferences can be presented and discussed. An advisory vote is then taken among the participants. The final decision is taken by the Steering Committee as soon as possible after the conference. Other matters regarding the organization of our yearly meetings are also encouraged to be discussed.

About IIIS

The Institute for Interdisciplinary Information Sciences (IIIS) was established on December 30, 2010, under the leadership of the Turing Laureate Prof. Andrew Chi-Chih Yao. The Institute aims to become one of the world-leading research centers on interdisciplinary information sciences as well as to offer a habitat for research and education of theoretical computer science and quantum information science in China.

IIIS is primarily engaged in the interaction of information science with other disciplines, such as physics, mathematics, as well as life science and social sciences. Along with the innovative development of information sciences, the Institute is committed to cultivating the next generation of scientific talents in China.

IIIS is an umbrella institute hosting four research organizations, namely Institute for Theoretical Computer Science (ITCS), Center for Quantum Information (CQI), Center for Machine Intelligence (CMI), and Laboratory for Secure Computing (LSC). IIIS also hosts four international research centers, namely Tsinghua-MIT-CUHK Research Center for Theoretical Computer Science (CTCS), Tsinghua-Michigan Joint Center for Quantum Information (JCQI), Tsinghua-Waterloo Joint Center for Quantum Computing (JCQC), and Tsinghua-Aarhus Center for the Theory of Interactive Computation (CTIC).

About Beijing

Transportation

In China, the traffic is on the right side of the road as in North America and continental Europe.

Taxi:
Legal taxis' license numbers in Beijing begin with "京B". The price of a taxi is ￥2/kilometer with an initial price of ￥10. An additional fuel fee of ￥2 will be charged if the distance exceeds 3 kilometers. The charge would be 20% higher after 15 kilometers or during the night time (11pm -5am). Please pay according to the mile meter. Please ask for a receipt from your taxi driver in case you accidentally leave something in the car.
To book taxis, please call the local phone number: 96103.

Subway
The nearest subway stations to Tsinghua:
Wudaokou (五道口), near Tsinghua Main (East) Gate on Line 13
Yuanmingyuan (圆明园), near Tsinghua West Gate on Line 4

Currency & Exchange
Most currencies and travelers check can be exchanged into Chinese RMB at major banks, including the Bank of China. The exchange rate in China is maintained by the government and should be the same at both hotels and banks.
Major credit cards such as Master Card, Visa, JCB, Diners and American Express can be used to pay for hotel rooms, purchasing goods in large shopping centers, and for meals in some restaurants, however, they are not accepted at many small-scale shops and restaurants.

Tips & Tax
In Beijing, tipping is not commonly practiced and is considered unnecessary. Taxes are included in the stated prices.

Medical Facilities

In case of emergency, dial **110**. If you have a medical emergency, you can dial **120** for help. Pharmaceuticals are available at pharmacies. The main one is Tong Ren Tang in Tsinghua. They are usually open 7 days a week, from 9 a.m. to 7 p.m. You can also ask medical questions to a pharmacist.

Lost Passport

If you have lost your passport, you need to make a police report at any police station, then go to your embassy or consulate to get a temporary visa. Do not forget to ask a copy of the police report with the file number to hand it to your embassy.

Useful Numbers

QIP2013 Secretariat +86-10-62781693
Emergency Services
    Police 110
    Ambulance 120
    Fire 119
    Foreigners 6525 5486
Directory assistance **114**
Beijing Tourist Hotline 65130828
To know the phone number of your embassy / consulate or high commission, dial **114**
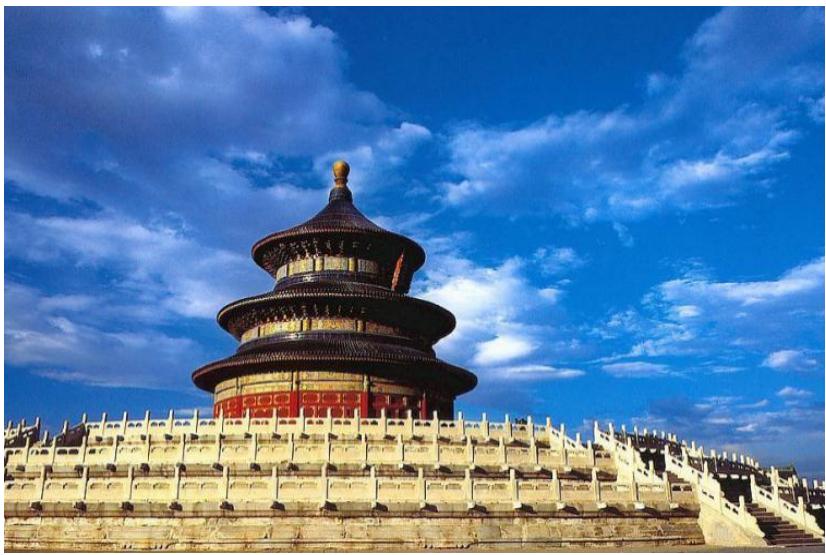
Tourist Attractions in Beijing and nearby

Beijing, also known as Peking, is the cultural, political, and intellectual center of China, as well as a major industrial and commercial metropolis. Initially settled more than 2,000 years ago, it has been the capital of the country for most of the last 700 years.

The Forbidden City is the largest and most well preserved imperial residence in China today, located on city center of Peking. The construction began in 1406 under the Ming Emperor Yongle and took 14 years. The first ruler who actually lived in the Forbidden City was Ming Emperor Zhudi. For five centuries thereafter, the Forbidden City continued to be the residence of 23 successive emperors until 1911 when Qing Emperor Puyi was forced to abdicate the throne. In 1987, the United Nations Educational, Scientific and Cultural Organization recognized the Forbidden City as a world cultural heritage. The Palace Museum, or Zi Jin Cheng (Purple Forbidden City), got its name from traditional astronomy and folklore. Zi, or 'Purple', refers to the North Star (Ziwei), which in ancient China was believed to be the abode of the Celestial Emperor. The surrounding celestial region, the Ziwei Enclosure, was the realm of the Celestial Emperor and his family. The Forbidden City, as the residence of the terrestrial emperor, was designed to be its earthly counterpart.

The Temple of Heaven (Tiantan) situated in Beijing, Chongwen District, is a 2.7 million square meters building, constructed in 1420 to serve as a venue for emperors of the Ming and Qing dynasties to pray to Heaven for good harvests. The worldwide fame of Tiantan is attributed to its elegantly ornamented architecture structures. The Qiniandian, or Hall of Prayer for Good Harvest, is the centerpiece of Tiantan, built in a unique Chinese style, it is a circular wooden structure 38 meters in height and 32 meters in diameter, with a triple conical roof topped with a huge gold-plated cupola. As you may have noticed, the Qiniandian is also one of the icons of QIP 2013.

The Great Wall symbolizes China's ancient civilization. It is at a distance of 75 kilometers northwest of Beijing. Its highest point at Badaling is some 800 meters above sea level. The construction of the Wall first began during the period of the Warring States (476 – 221 BC). Formerly, walls were built at strategic points by different kingdoms to protect their northern territories. In 221 BC after the first Emperor of the Qin Dynasty unified China, he decided to have the walls linked up and extended.

The Summer Palace located approximately twelve kilometers to the northwest of Beijing, was first built in 1750 and rebuilt in 1886. An outstanding example of imperial gardens in classical Chinese style, the Summer Palace spreads on an area of 2.9 million square meters, three fourths of which are water surfaces. Its major attractions are the Wanshou (longevity) Hill and the Kunming (Jade Spring) Lake. The garden is a showcase of pavilions in diversified, exotic designs, which are strung together by a corridor more than seven hundred meters in length and a seemingly unending chain of balustrades of snow-white marbles. With western hills simmering in the background, the Summer Palace is strewn with perfect postcard sceneries, including the Yuquan (Jade Spring) Pagoda, the Kunming Lake, and the seventeen-arches bridge. The huge garden's artistic style, which is at once kaleidoscopic and harmonious, is attributable to the unknown designers' ingenious landscaping skills.

Tian'anmen Square is the geographical center of Beijing City. It is the largest city square in the world, occupying an area of 440,000 square meters (about 109 acres), and able to accommodate 10,000,000 people at one time. The square is a conglomeration of splendid and beautiful flowers and the red national flag which flutters in the wind. On the north side of the Square is the gate "Tian'an men" (the Gate of Heavenly Peace). It was built in 1417 and served as the entrance gate to the Forbidden City.

Learn Some Useful Chinese in One Minute:

English words	Chinese characters	Pronunciation	Chinese Pinyin
Hello	你好	/Nee-haoww/	ni hao
Thank you	谢谢	/Sshyeah-sshyeah /	xie xie
Excuse me	打扰一下	/Daa-raoww-ee-sshyaa /	da rao yi xia
Sorry	对不起	/Dway-boo-chee/	Dui bu qi
How much is it?	这个多少钱？	/jer-ger-dwor-shaoww-chyen/	Zhe ge duo shao qian
ok	好的	/Haoww-der/	Hao de
delicious	好吃	/Haoww-chrr/	Hao chi
My name is….	我叫。。。	/Wor-jyaoww/	Wo jiao
Where is the toilet?	厕所在哪里	/Tser-swor-dzeye-naa-lee/	Ce suo zai na li
What's this?	这是什么？	/Jer-shrr-shnn-mor/	Zhe shi shen me
Airport	机场	/Jee-channg/	Ji chang
Go to…	去。。。。	/Chyoo/	Qu…
I don't understand it.	我听不懂	/Wor-ting-boo-dong/	Wo ting bu dong
See you.	再见	/dzeye-jyen/	Zai jian
entanglement	纠缠	/Jill-chan/	Jiu Chan
quantum	量子	/Lyanng- dzrr/	Liang Zi

Where to have lunch around the conference location

Restaurants/Canteens On Campus:

1.Xi Chun Yuan Restaurant 熙春园餐厅	**Location:** east of Jinchun Garden **Specialties:** Shanghai, Huaiyang, Sichuan cuisines
2.He Yuan 荷园餐厅	**Location:** northeast of Jinchun Garden, second floor **Specialties:** menu order, different cuisines
3.Guest House-Jia Suo 甲所餐厅	**Location:** west of the Old Gate **Specialties:** Cantonese cuisines, home-style cooking
4.Lan Yuan 澜园教工食堂	**Location:** second floor of Zhao Lan Yuan Community Shopping Center **Specialties:** menu order, various regional cuisines

Restaurants outside Campus:

All along Zhongguancun East Road, until Chengfu Road, you will find places to eat at reasonable prices.

You can also go to the city center (stop at Wudaokou Hualian Shopping Mall) and try one of the numerous food courts located at the top-level of the shopping center.

1. *Shuijing Barbecue Restaurant (Wudaokou Branch)* 水晶烤肉

Add: Building No. B1, Korean Gourmet Plaza, No. 23 Chengfu Road, Haidian District (next to Wudaokou Cinema)

Tel: 010-62327866

Business hour: 10: 00-22: 00

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2. *Yangfang Dadu Hotpot Restaurant* 阳坊大都涮羊肉

Add: No. 156, Chengfu Road, Haidian District (close to the south gate of Tsinghua University)

Tel: 010-62544275

Business hour: 09: 00-21: 00

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3. *Jiaheyipin Porridge Restaurant (Tsinghua Branch)* 嘉和一品粥店（清华店）

Add: No. 244, Chengfu Road, Haidian District (close to Lanqiying Bus Stop)

Tel: 010-62566787

Business hour: 24/7

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4. *Mianxiangbafang Noodle Restaurant* 面香八方面馆

Add: 2nd Floor, Huayuan Century Business Building, No. 88, Shuangqing Road, Haidian District (close to the east gate of Tsinghua University)

Tel: 010-82526818

Business hour: 11: 00-02: 30 next day

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5. *Shuimujintang Pan-fried Barbeque Restaurant* 水木锦堂铁板自助餐厅

Add: 2nd Floor, Building No. D, Tsinghua Science Park, Wudaokou, Haidian District

Tel: 010-82151999

Business hour: 11: 00—14: 30, and 17: 00—22: 00

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6. *Nadu Spicy Hotpot Restaurant (Shuangqing Road Branch)* 拿渡麻辣香锅

Add: Room 103, Building No. 1, Huayuan Century Business Building, No. 88, Shuangqing Road, Haidian District (close to the east gate of Tsinghua University)

Tel: 010-82526030

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7. *Tianchumiaoxiang Vegetarian Restaurant* 天厨妙香素食餐厅

Add: Room 110, 1st Floor, Chuangye Building, East Gate of Tsinghua University, Haidian District (inside the Tsinghua Science Park)

Tel: 010-62797078

Business hour: 10: 00-22: 00

[Afternoon Tea] 14: 00—17: 00

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8. *Ganguoju Restaurant* 干锅居

Add: 2nd Floor, Sohu Building, No. 1, East Zhongguancun Road, Haidian District

Tel: 010-58722008

Business hour: 11: 00-14: 10, and 16: 50-22: 10

Conference Venue Information

Venue Address

Mong Man Wai Concert Hall

No. 1, Tsinghua Science Park,

Haidian District,

Beijing, China

Wireless

SSID: QIP2013   **Password:** qip@bjts

Conference Talks: January 21 -25, Mong Man Wai Concert Hall, Tsinghua University

Banquet: January 23, 6:00 p.m., Holiday Inn

Poster Sessions: January 21 -22, Lecture Hall, New Tsinghua Xuetang, Tsinghua University

Rump Session: January 24, 6:00 p.m., Holiday Inn

Scientific Program

Sunday, January 20

14:00-18:00   **Registration (Venue: Lobby of Mong Man Wai Concert Hall)**

Monday, January 21

8:15-9:00   **Registration**

9:00-9:25   **Opening remarks**

9:25-10:15   **Ben Reichardt (Plenary Lecture, joint work with Falk Unger and Umesh Vazirani):**
"A classical leash for a quantum system: command of quantum systems via rigidity of CHSH games."

10:15-10:40   **Coffee break**

10:40-11:00   **Carlos Palazuelos**:
"Super-activation of quantum nonlocality."

11:05-11:25   **Tom Cooney, Marius Junge, Carlos Palazuelos, David Peréz-García, Oded Regev, and Thomas Vidick**:
"Rank-one and Quantum XOR games."

11:30-11:50   **Eric Chitambar, Debbie Leung, Laura Mančinska, Maris Ozols, and Andreas Winter**:
"Everything You Always Wanted to Know About LOCC (But Were Afraid to Ask).

11:50-14:00   **Lunch break**

14:00-14:50   **Liang Jiang (Plenary Lecture):**
"Majorana Fermions and Topological Quantum Information Processing."

14:55-15:25   **Sergey Bravyi and Robert König (Featured Talk):**
"Classification of topologically protected gates for local stabilizer codes."

15:25-15:50   **Coffee break**

15:50-16:10   **Michał Horodecki and Jonathan Oppenheim**:
"Fundamental limitations for quantum and nano thermodynamics."

16:15-16:35   **Michael Ben-Or, Daniel Gottesman, and Avinatan Hassidim**:
"Quantum Refrigerator."

16:40-17:00   **Michael Kastoryano and Kristan Temme**:
               "Quantum logorithmic Sobolev inequalities and rapid mixing."

17:00-19:30   **Poster Session 1**

Tuesday, January 22

9:00-9:50   **Ronald de Wolf (Plenary Lecture, joint work with Samuel Fiorini, Serge Massar, Sebastian Pokutta, and Hans Raj Tiwary):**
               "Lower bounds for combinatorial polytopes, inspired by quantum communication complexity."

9:55-10:15   **Iordanis Kerenidis, Sophie Laplante, Virginie Lerays, Jérémie Roland, and David Xiao:**
               "Bell tests and applications to communication and information complexity."

10:15-10:40   **Coffee break**

10:40-11:00   **Fernando Brandão and Aram Harrow:**
               "Quantum de Finetti Theorems under Local Measurements with Applications."

11:05-11:25   **Ke Li and Andreas Winter:**
               "Relative entropy and squashed entanglement."

11:30-11:50   **Michael Walter, Brent Doran, David Gross, and Matthias Christandl:**
               "Entanglement Polytopes."

11:50-14:00   **Lunch break**

14:00-14:50   **Thomas Vidick (Plenary Lecture, joint work with Tsuyoshi Ito):**
               "A multi-prover interactive proof for NEXP sound against entangled provers."

14:55-15:15   **Stephen Jordan, Hirotada Kobayashi, François Le Gall, Daniel Nagaj, and Harumichi Nishimura:**
               "Towards Perfect Completeness in QMA."

15:15-15:40   **Coffee break**

15:40-16:10   **Aleksandrs Belovs and Robert Špalek (Featured Talk):**
               "Adversary Lower Bound for the k-sum Problem."

16:15-16:35   **Troy Lee, Frédéric Magniez, and Miklos Santha:**
               "Improved Quantum Query Algorithms for Triangle Finding and Associativity Testing."

16:40-17:00   **Aleksandrs Belovs:**
               "Learning-Graph-Based Quantum Algorithm for k-distinctness."

17:00-19:30   **Poster Session 2**

Wednesday, January 23

9:00-9:50	**Umesh Vazirani (Plenary Lecture, joint work with Thomas Vidick):** "Fully device independent quantum key distribution."
9:55-10:15	**Jonathan Barrett, Roger Colbeck, and Adrian Kent:** "Unconditionally secure device-independent quantum key distribution with only two devices."
10:15-10:40	**Coffee break**
10:40-11:10	**Rodrigo Gallego, Lluis Masanes, Gonzalo de La Torre, Chirag Dhara, Leandro Aolita, and Antonio Acín (Featured Talk):** "Full randomness from arbitrarily deterministic events."
11:15-11:45	**Harry Buhrman, Matthias Christandl, and Christian Schaffner (Featured Talk):** "Complete Insecurity of Quantum Protocols for Classical Two-Party Computation."
11:50-12:20	**Patrick Hayden and Alex May (Featured Talk):** "Summoning Information in Spacetime, or Where and When Can a Qubit Be?"
12:20-12:30	**Group Photo (in front of the Concert Hall)**
12:30-18:00	**Lunch break and free time**
18:00	**Conference banquet**

Thursday, January 24

9:00-9:50	**Stephen Jordan (Plenary Lecture, joint work with Keith Lee and John Preskill):** "Quantum Algorithms for Quantum Field Theories."
9:55-10:15	**Matthias Christandl, Mehmet Burak Şahinoğlu, and Michael Walter:** "Recoupling Coefficients and Quantum Entropies."
10:15-10:40	**Coffee break**
10:40-11:10	**Fernando Brandão and Aram Harrow (Featured Talk):** "Approximation Guarantees for the Quantum Local Hamiltonian Problem and Limitations for Quantum PCPs."
11:15-11:35	**Norbert Schuch, Didier Poilblanc, Ignacio Cirac, and David Péréz-Garcıa:** "Resonating valence bond states in the PEPS formalism."
11:40-12:00	**Oleg Szehr, David Reeb, and Michael Wolf:** "Spectral Bounds on the Convergence of Classical and Quantum Markov Chains."

12:00-14:00   **Lunch break**

14:00-14:50   **<u>David DiVincenzo</u> (Plenary Lecture):**
"Prospects for Superconducting Qubits"

14:55-15:15   **<u>Olivier Landon-Cardinal</u> and David Poulin:**
"Local topological order inhibits thermal stability in 2D."

15:15-15:40   **Coffee break**

15:40-16:00   **<u>Kamil Michnicki</u>:**
"Topological stabilizer codes with a power law energy barrier via welding."

16:05-16:25   **Dominic Else, <u>Stephen Bartlett</u>, and Andrew Doherty:**
"Symmetry protection of measurement-based quantum computation in ground states."

16:25-16:45   **Break**

16:45-17:45   **Business meeting**

19:00   **Buffet dinner and rump session**

Friday, January 25

9:00-9:20   **Andrew Childs, David Gosset, and Zachary Webb:**
                "Universal computation by multi-particle quantum walk."

9:25-9:45   **Victor Veitch, Chris Ferrie, David Gross, and Joseph Emerson:**
                "Negative Quasi-Probability as a Resource for Quantum Computation."

9:45-10:15   **Coffee break**

10:15-10:45   **Robert König and Graeme Smith (Featured Talk):**
                "Limits on classical communication from quantum entropy power inequalities."

10:50-11:10   **William Matthews and Stephanie Wehner:**
                "Finite blocklength converse bounds for quantum channels."

11:15-11:35   **Marco Tomamichel and Masahito Hayashi:**
                "Hierarchy of Information Quantities for the Finite Block Length Analysis of
                Quantum Tasks"; merged with
                Ke Li:
                "Second Order Asymptotics for Quantum Hypothesis Testing."

11:40-12:10   **Ashley Montanaro (Featured Talk):**
                "Weak multiplicativity for random quantum channels."

12:10-14:20   **Lunch break**

14:20-15:10   **Fernando Brandão (Plenary Lecture, joint work with Michał Horodecki):**
                "Exponential Decay of Correlations Implies Area Law."

15:15-15:45   **Zeph Landau, Umesh Vazirani, Itai Arad, and Alexei Kitaev (Featured Talk):**
                "An area law and sub-exponential algorithm for 1D systems."

15:45-15:50   **Closing remarks**

Poster Sessions

The Programme Committee has accepted 150 posters, which will be presented in two poster sessions on Monday/Tuesday (21/22 January 2012) from 17:00-19:30. The posters will be located at the Lecture Hall (Fourth Floor), New Tsinghua Xuetang, next to the conference hall.

Poster Awards:
Participants are invited to select posters for awards. To vote, please use the ballots included in your conference kit. The best posters will be determined by the participants' votes on each day. Posters will be rewarded symbolic prices (at the rump session) based on the outcome of the votes.

Installation Instructions:
Each accepted poster will be assigned a panel, large enough to hold an A0 size poster (i.e. width 33.1 in = 84.1 cm, height 46.8 in = 118.9cm). In view of space constraints at the venue we require contributors to use portrait (tall) rather than landscape (wide) orientation. Please check below whether your session is on Monday or Tuesday. Your poster number will tell you where to install it. You can install your poster starting from noon, the day of your session.

SESSION 1 (Monday, January 21)

1. Jens Eisert, Markus Mueller and Christian Gogolin
Quantum measurement occurrence is undecidable

2. Francesco Buscemi
On the interconvertibility of bipartite quantum states by local operations and shared randomness, and the nonlocality hidden in any entangled state

3. Jun Zhou, Hpng-Yi Fan and Jun Song
A new type of photon-added squeezed coherent state and its statistical properties

4. Stacey Jeffery, Robin Kothari and Frédéric Magniez
Improving the Quantum Query Complexity of Boolean Matrix Multiplication Using Graph Collision

5. Michal Hajdusek and Mio Murao
Direct evaluation of pure graph state entanglement

6. Marco Tomamichel, Serge Fehr, Jedrzej Kaniewski and Stephanie Wehner
Strong Parallel Repetition for a Monogamy-of-Entanglement Game

7. Fabio Pedrocchi, Adrian Hutter, James Wootton and Daniel Loss
Local 3D spin Hamiltonian as a thermally stable surface code

8. Chen-Fu Chiang, Hamed Ahmadi and Guillermo Gomez
Estimation with Arbitrary Constant-Precision Phase Shift Operators + Hitting Time of Quantum Walks with Perturbation

9. Jianxin Chen and Andreas Winter
Non-Additivity of the Entanglement of Purification (Beyond Reasonable Doubt)

10. Maarten Van Den Nest
Universal quantum computation with little entanglement

11. Jordi Tura Brugués, Remigiusz Augusiak, Philipp Hyllus, Marek Kus, Jan Samsonowicz and Maciej Lewenstein
Entangled symmetric states of N qubits with all positive partial transpositions

12. Fernando de Melo, Piotr Cwiklinski and Barbara Terhal
The Power of Noisy Fermionic Quantum Computation

13. Carlos Fernández-González, Norbert Schuch, Michael M. Wolf, J. Ignacio Cirac and David Pérez-García
Gapless Hamiltonians for the toric code using the PEPS formalism

14. Robert Hübener, Andrea Mari and Jens Eisert
Wick's theorem for matrix product states

15. Francesco Buscemi, Nilanjana Datta, Patrick Hayden, Min-Hsiu Hsieh, Mark Wilde and Andreas Winter
Communication costs of quantum measurement simulation and quantum-to-classical lossy data compression

16. Mario Berta, Omar Fawzi and Stephanie Wehner
Quantum to classical randomness extractors

17. Jedrzej Kaniewski, Marco Tomamichel, Esther Haenggi and Stephanie Wehner
Secure bit commitment from relativistic constraints

18. Yoshifumi Nakata and Mio Murao
Diagonal-unitary t-design and their implementations by quantum circuits

19. Tanvirul Islam and Stephanie Wehner
Computability limits non-local correlations

20. Michael Kastoryano, Michael Wolf and Jens Eisert
Precisely timing dissipative quantum information processing

21. Cécilia Lancien and Andreas Winter
Distinguishing multi-partite states by local measurements

22. Loïck Magnin and Jérémie Roland
Explicit relation between all lower bound techniques for quantum query complexity

23. Nilanjana Datta, Milan Mosonyi, Min-Hsiu Hsieh and Fernando Brandao
Strong converses for classical information transmission and hypothesis testing

24. Corsin Pfister and Stephanie Wehner
If no information gain implies no disturbance, then any discrete physical theory is classical

25. Hong Wei Li, Piotr Mirononwicz and Marcin Pawlowski
On the relation between semi and fully device independent protocols

26. Eyuri Wakakuwa and Mio Murao
Chain rule implies Tsirelson's bound

27. Andris Ambainis and Ashley Montanaro
The quantum query complexity of combinatorial group testing

28. Cyril Stark
Simultaneous Estimation of Dimension, States and Measurements

29. Waldemar Klobus, Andrzej Grudka, Michal Horodecki, Pawel Horodecki, Ryszard Horodecki and Lukasz Pankowski
Mutual uncertainty

30. Stacey Jeffery, Robin Kothari and Frederic Magniez
Nested Quantum Walks with Quantum Data Structures

31. Yasuhiro Takahashi and Seiichiro Tani
Collapse of the Hierarchy of Constant-Depth Exact Quantum Circuits

32. Jianxin Chen, Zhengfeng Ji, David Kribs and Bei Zeng
Minimum Entangling Powers are Maximum

33. Sergei Strelchuk, Michal Horodecki and Jonathan Oppenheim
Entanglement Recycling and Generalized Teleportation

34. Yi-Kai Liu, Steven Flammia, David Gross and Jens Eisert
A Restricted Isometry Theorem for Pauli Measurements, and the Sample Complexity of Tomography

35. Juan Bermejo-Vega and Maarten Van Den Nest
A Gottesman-Knill theorem for all finite Abelian groups

36. Rahul Jain, Yaoyun Shi, Zhaohui Wei and Shengyu Zhang
Efficient protocols of generating bipartite classical distributions and quantum states

37. Andrew Childs, Debbie Leung, Laura Mancinska and Maris Ozols
A framework for bounding nonlocality of state discrimination

38. Abuzer Yakaryilmaz
Public-qubits versus private-coins

39. Laura Mančinska, Giannicola Scarpa and Simone Severini
New separations in zero-error channel capacity through projective Kochen-Specker sets and quantum coloring

40. Damián Pitalúa-García
Deduction of an upper bound on the success probability of port-based teleportation from the no-cloning theorem and the no-signaling principle

41. Sofyan Iblisdir, Mauro Cirio, Octavi Boada and Gavin Brennen
Low Depth Quantum Circuits for Ising Models

42. Niel De Beaudrap
A linearized stabilizer formalism for systems of finite dimension

43. Yuchun Wu and Guang-Can Guo
Structure feature of Clauser-Horne-Shimony-Holt type Bell inequalities

44. Daniel Nagaj, Rolando Somma and Maria Kieferova
Quantum Speedup by Quantum Annealing

45. Joonwoo Bae
Distinguishability, Ensemble Steering, and the No-Signaling Principle

46. Peng Xue and Barry Sanders
Controlling and reversing the quantum-to-classical transition of a quantum walk by driving the coin

47. Xie Chen, Zheng-Cheng Gu, Zheng-Xin Liu and Xiao-Gang Wen
Many-body Entanglement in Symmetry Protected Topological Systems

48. Anne Marin and Damian Markham
Sharing quantum and classical secrets

49. Cedric Beny and Tobias Osborne
An information-theoretic formulation of the renormalization group

50. Yang Liu and Shengyu Zhang
Quantum and randomized communication complexity of XOR functions in the SMP model

51. Renato Renner, Vedran Dunjko, Joseph F Fitzsimons and Christopher Portmann
Composability of secure delegated quantum computation

52. Adam Bookatz, Pawel Wocjan, Stephen Jordan and Yi-Kai Liu
Testing quantum expanders is co-QMA-complete

53. Yaoyun Shi and Xiaodi Wu
Limits of quantum one-way communication by matrix Hypercontractive Inequalities

54. Damián Pitalúa-García
Quantum information causality

55. Salman Beigi
A New Quantum Data Processing Inequality

56. Salman Beigi and Amin Gohari
Information Theoretic Benefit of Entanglement in Classical Communication Settings

57. Cedric Beny and Tobias Osborne
Inverting the renormalization group

58. Matthew Coudron and Ramis Movassagh
Unfrustration Condition and Degeneracy of Qudits on Trees

59. Alex Arkhipov
Extending and Characterizing Quantum Magic Games

60. Philippe Faist, Frédéric Dupuis, Jonathan Oppenheim and Renato Renner
Quantitative Quantum Landauer's Principle

61. John Smolin
The IBM Superconducting Quantum Computer Project: Experimental Achievements and Benchmarking

62. Matthew Amy, Dmitri Maslov, Michele Mosca and Martin Roetteler
A meet-in-the-middle algorithm for fast synthesis of depth-optimal quantum circuits

63. Andrzej Grudka, Michał Horodecki, Paweł Horodecki, Paweł Mazurek, Łukasz Pankowski and Anna Przysiężna
Long distance quantum communication over noisy networks.

64. Andrzej Grudka, Karol Horodecki, Michal Horodecki, Pawel Horodecki, Ryszard Horodecki, Pankaj Joshi, Waldemar Klobus and Antoni Wojcik
Quantifying contextuality

65. Hector J. Garcia, Igor L. Markov and Andrew W. Cross
Efficient Inner-product Algorithm for Stabilizer States

66. Allison Koenecke and Pawel Wocjan

Recovering the period in Shor's algorithm with Gauss' algorithm for lattice basis reduction

67. Isaac Kim

Perturbative analysis of topological entanglement entropy from conditional independence

68. Vadym Kliuchnikov, Dmitri Maslov and Michele Mosca

Fast and efficient exact synthesis of single qubit unitaries generated by Clifford and T gates

69. Brittanney Amento, Martin Roetteler and Rainer Steinwandt

Efficient quantum circuits for binary elliptic curve arithmetic: reducing T-gate complexity

70. Guillaume Duclos-Cianci and Krysta Svore

A State Distillation Protocol to Implement Arbitrary Single-qubit Rotations

71. Jeongwan Haah

Commuting Pauli Hamiltonians as maps between free modules

72. Normand Beaudry, Stefano Mancini and Renato Renner

Security proof of two-way quantum key distribution protocols with partial device independence

73. Alessandro Cosentino, Robin Kothari and Adam Paetznick

Dequantizing read-once quantum formulas

74. Gorjan Alagic, Stephen Jordan and Stacey Jeffery

Quantum and Classical Circuit Obfuscation with Braids

75. Robin Blume-Kohout, Dylan Maher, Lee Rozema, Ardavan Darabi, Chris Ferrie and Aephraim Steinberg

The power of null-space sampling: Quadratic speedups for quantum estimation

SESSION 2 (Tuesday, January 22)

76. Laura Mancinska and David Roberson

Graph homomorphisms for quantum players

77. Boaz Barak, Fernando Brandao, Aram Harrow, Jonathan Kelner, David Steurer and Yuan Zhou

SDP hierarchies for separability, with applications to small-set expansion

78. Jan Bouda, Matej Pivoluska, Martin Plesch and Colin Wilmott

Weak randomness seriously limits the security of QKD

79. Min Li, Yong-Sheng Zhang and Guang-Can Guo
Quantum random walk in periodic potential on a line

80. Fernando Iemini and Reinaldo O. Vianna
Computable Measures for the Entanglement of Indistinguishable Particles

81. Mateus Araújo, Marco Túlio Quintino, Costantino Budroni, Marcelo Terra Cunha and Adán Cabello
Complete characterization of the n-cycle noncontextual polytope

82. Robert Matjeschk, Andre Ahlbrecht, Albert Werner, Martin Enderlein, Christopher Cedzich, Michael Keyl, Tobias Schaetz and Reinhard Werner
Quantum Walks with Non-Orthogonal Position States

83. Courtney Brell
Universal Topologically Protected Adiabatic Cluster State Quantum Computation

84. Wieslaw Laskowski, Christian Schwemmer, Daniel Richart, Tomasz Paterek and Harald Weinfurter
Experimental Schmidt Decomposition and State Independent Entanglement Detection

85. Waldemar Klobus, Andrzej Grudka, Michal Horodecki, Pawel Horodecki, Ryszard Horodecki and Lukasz Pankowski
Exclusion principle for correlations

86. Junghee Ryu, Marek Zukowski, James Lim and Jinhyoung Lee
Operational Quasiprobabilities for Qudits

87. Tobias Fritz, Ana Belén Sainz, Remigiusz Augusiak, Jonatan Bohr Brask, Rafael Chaves, Anthony Leverrier and Antonio Acín
Local Orthogonality: a multipartite principle for correlations

88. Shelby Kimmel and Marcus P. Da Silva
Robust Quantum Process Characterization Beyond Fidelity to Clifford Unitaries

89. David Reeb and Michael M. Wolf
(Im-)Proving Landauer's Principle

90. Marcin Wiesniak, Mohamed Nawareg, Marek Zukowski and Koji Maruyama
Bell Inequalities with Lower Order Correlations

91. Thiago Maciel, André Cesário, Reinaldo Vianna, Carlile Lavor and Douglas Gonçalves
Analects on quantum tomographies and inference schemes.

92. Nelly Ng, Siddarth Joshi, Chen Ming Chia, Mario Berta, Christian Kurtsiefer and Stephanie Wehner
Experimental implementation of bit commitment in the noisy-storage model

93. Raqueline A. M. Santos and Renato Portugal
Simulations of Quantum Markov Chains on Percolation Graphs

94. Yu Cai, Jean-Daniel Bancal and Valerio Scarani
CGLMP inequality as a dimension witness

95. Yingkai Ouyang and Wee Hao Ng
Truncated quantum channel representations for coupled harmonic oscillators

96. Ansis Rosmanis
Toward Adversary Bound for Element Distinctness with Small Range

97. Marco Piani, Tan K Chuan, Jean Maillard, Kavan Modi, Tomasz Paterek and Mauro Paternostro
Quantum discord bounds the amount of distributed entanglement

98. Yanbao Zhang, Scott Glancy and Emanuel Knill
Efficient quantification of experimental evidence against local realism

99. Tzyh Haur Yang, Miguel Navascues, Matthew McKague and Valerio Scarani
Robust Self Testing of Pure Entangled States

100. Phuc Thinh Le, Jeysthur Ang, Lana Sheridan and Valerio Scarani
Robustness of Bell inequalities against reduced "free will" attacks and its relation to Bell-based randomness expansion.

101. Thomas Lawson, Anna Pappa, Damian Markham, Iordanis Kerenidis and Eleni Diamanti
Adversarial entanglement verification without shared reference frames.

102. Anna Pappa, Thomas Lawson, André Chailloux, Eleni Diamanti and Iordanis Kerenidis
Adversarial Multipartite Entanglement Verification in realistic conditions.

103. Michele Dall'Arno, Elsa Passaro, Rodrigo Gallego and Antonio Acín
Robustness of Device Independent Dimension Witnesses.

104. Michele Dall'Arno, Elsa Passaro, Rodrigo Gallego, Marcin Pawlowski and Antonio Acín
Attacks on Semi-Device-Independent Quantum Protocols.

105. Ciara Morgan and Andreas Winter
Towards a strong converse for the quantum capacity of degradable channels

106. Adam Paetznick, Vinayak Pathak, Lucy Liuxuan Zhang and Austin Fowler
Surface code braid compaction

107. Mark Um, Xiang Zhang, Junhua Zhang, Yang-Chao Shen, Ye Wang, Dong-Ling Deng, Lu-Ming Duan and Kihwan Kim
Random Numbers Certified by Quantum Contextuality

108. Joseph M. Renes and David Sutter
Efficient Quantum Channel Coding Scheme Requiring No Preshared Entanglement

109. Frédéric Dupuis, Lea Kraemer, Philippe Faist, Joseph M. Renes and Renato Renner
Generalized Entropies

110. Adam Bouland and Scott Aaronson
Any Beam Splitter and Any Phase Generate Universal Quantum Linear Optics

111. Alex Bocharov, Yuri Gurevich and Krysta M. Svore
Decomposing a Single-Qubit Gate into an Efficiently Universal Basis

112. Matthew Wardrop
A Two-Qubit Exchange Gate Proposal for Singlet-Triplet Quantum Dot Qubits

113. Sania Jevtic, Matthew Pusey, David Jennings and Terry Rudolph
Visualizing two qubit states: the steering ellipsoid

114. Natasha Gabay and Nicolas Menicucci
Optical Continuous-Variable Cluster States as Schwinger Spin States

115. Xiang Zhang, Mark Um, Junhua Zhang, Shuoming An, Ye Wang, Dongling Deng, Chao Shen, Luming Duan and Kihwan Kim
State-independent quantum contextuality in an indivisible system.

116. Ramij Rahaman
Nonlocality test for Genuine Multipartite Entanglement without inequality.

117. Jacob Cale Bridgeman, Aroon O'Brien, Stephen D Bartlett and Andrew C Doherty
Simulating a Class of Critical Quantum Systems using Tensor Network Methods.

118. Poya Haghnegahdar and Robert Raussendorf
Transforming AKLT-like states to Graph-States (universal resources for measurement based quantum computation).

119. Rafael N. Alexander and Nicolas C. Menicucci
Efficient use of squeezing in continuous-variable cluster computing.

120. Andrew Darmawan and Stephen Bartlett
Producing an approximate qubit cluster state as the unique ground state of a deformed antiferromagnetic Hamiltonian.

121. Dominic Williamson and Stephen Bartlett

Quantum Computation Within Symmetry-Protected Topologically Ordered Phases of Spin Chains

122. Patrick Coles

Unification of different views of decoherence

123. Youngrong Lim, Mauro Paternostro, Minsu Kang, Jinhyoung Lee and Hyunseok Jeong

Power of macroscopic entanglement for detection-loophole free Bell test

124. Tommaso Federico Demarie, Gavin Brennen and Nicolas Menicucci

Topologically Ordered States with CV Modes on a 2D Lattice

125. Jinwoo Park, Mark Saunders, Yong-Il Shin, Kyungwon An and Hyunseok Jeong

Violation of local realism with entanglement between an atom and a coherent cavity field

126. Maryam Yazdani, Morteza Saheb Zamani and Mehdi Sedighi

A Quantum Physical Design Flow for Quantum Circuits in Ion Trap Technology

127. Matthias Kleinmann, Costantino Budroni, Jan-Ake Larsson, Otfried Gühne and Adan Cabello

Optimal inequalities for state-independent contextuality

128. Dmitry Kravchenko

Expected Values of Some Random Nonlocal Games

129. Mauro Faccin, Zoltan Zimboras and Jacob Biamonte

Quantum Transport Enhancement by Time-Reversal Symmetry Breaking.

130. Dominic Berry, Richard Cleve and Sevag Gharibian

Gate-efficient discrete simulations of continuous-time quantum query algorithms.

131. Alex Monras and Andreas Winter

The Completely-Positive Realization Problem

132. Daniel Gottesman and Lucy Liuxuan Zhang

All Transversal Gates are Topological

133. Stefan Baeuml, Matthias Christandl and Andreas Winter

Limitations on privacy swapping

134. Francesco Petruccione and Ilya Sinayskiy

Microscopic derivation of open quantum walks

135. Joseph Bowles and Nicolas Brunner

Nonlocality vs computational power in graph states

136. Marco Túlio Quintino, Mateus Araújo, Daniel Cavalcanti, Colin Teo, Jiří Minář, Valerio Scarani, Adán Cabello, Marcelo França Santos and Marcelo Terra Cunha
Towards a loophole-free Bell test with continuous variables systems

137. Erik Woodhead
Security of BB84 based on the no-cloning theorem

138. Ritabrata Sengupta
EXTREMAL EXTENSIONS OF POSITIVE MAPS

139. Peter Lewis
Distinct quantum states can be compatible with a single state of reality

140. Rajat Mittal, Jamie Sikora and Sarvagya Upadhyay
Products of cone programs, with applications in quantum complexity theory

141. Kyungdeock Park, Robabeh Darabad, Jonathan Baugh and Raymond Laflamme
Implementation of Multiple Rounds Quantum Error Correction Using Nuclear and Electron Spins in the Solid State

142. Sandra Rankovic, Joseph Renes and Renato Renner
Entropic relations for time measurements on quantum clocks

143. Renato Portugal
Discrete-Time Quantum Walks on Fractals

144. Gemma De Las Cuevas and Toby Cubitt
NP-hard spin models can simulate any other model

145. Hussain Anwar, Earl Campbell and Dan Browne
Towards Fault-Tolerant Qudit Computation

146. Patrick Hayden, Kevin Milner and Mark Wilde
Two-message quantum interactive proofs and the quantum separability problem

147. Iryna Andriyanova, Denise Maurice and Jean-Pierre Tillich
Spatially coupled quantum LDPC codes

148. Noah Linden, Milan Mosonyi and Andreas Winter
The structure of Renyi entropic inequalities

149. Richard Kueng and David Gross
Stabilizer states are spherical 3-designs – with applications to quantum state distinguishability

150. Oleg Gittsovich, Juan Miguel Arrazola, Norbert Lütkenhaus, John M. Donohue, Jonathan Lavoie and Kevin J. Resch
Experimentally reliable entanglement verification

Banquet

Wednesday, January 23

Venue: Holiday Inn
No. 89, Shuangqing Road Haidian District, Beijing
Métro: Wudaokou (五道口) (Line 13)
Bus lines: Qianbajia (前八家) **(333),** Shuangqinglu Nankou（双清路南口）**(466)**
Time: 18:00 – 21:00
Theme: Fantastic old Beijing

Entertainment: A series of traditional Chinese performances by artists from the famous "Lao-She Teahouse" will be arranged, including the Chinese-style magic and acrobatics, "Sichuan face changing", Chinese Kung Fu, and others exciting shows. Here, you will get a glimpse of the traditional Beijing culture and enjoy a fantastic old Beijing night.

Food: Chinese cuisine.

Rump Session

Thursday, January 24

The rump session is a unique opportunity to give short presentations on new results, works in progress, open questions, announcements, and funny thoughts on topics of interest to the QIP community. Presentations are very short, something like 5 minutes each. The session takes place in a relaxed atmosphere with a buffet dinner served before the presentations. Non-technical and humorous contributions are very much appreciated.

Session Chair: Xiongfeng Ma (Tsinghua)

Rump submission guideline

Maximum 1/2 page (standard margin), single column, font size= 11pt min. Submissions should be made by email to: qip2013@iiis.tsinghua.edu.cn
Submissions are accepted from Monday, January 21 to Wednesday, January 23 at 4 p.m.

Venue

Holiday Inn
No. 89, Shuangqing Road Haidian District, Beijing
Métro: Wudaokou (Line 13)
Bus lines: 333, 466
Time 7:00 - 10:00 p.m.

QIP Charter

Goal of the Conference: The Workshop on Quantum Information Processing (QIP) is an annual conference about quantum computation and information which is usually held around January. Its goal is to represent the preceding year's best research in the area, in the form of both plenary talks and submitted papers. The conference has no published proceedings, and commonly includes the presentation of work published in proceedings of other conferences or in journals.

The Steering Committee: The role of the Steering Committee (SC) is to determine the longer-term course of the conference and to decide upon venues for the next conferences, and to select and invite the plenary speakers for each meeting of the conference. It should also serve as a watchdog and make sure there are no obvious mistakes, e.g., in the choice of time of the conference by the local organizing committee. The SC consists of 9 people, including the local organizers of the previous, next, and subsequent QIPs, and is chaired by the local organizer of the next/current QIP. Members typically serve for 3 years, with the 3 longest-serving members being replaced once a year, typically soon after QIP. The current SC decides on the replacement of outgoing SC members. The SC chooses the chair of the programme committee (PC) for the next QIP. Starting typically in late summer, the SC invites roughly 5 plenary presentations (of the best recent research, but possibly also some 1 to 3 perspective or survey talks) and possibly some tutorial speakers, but otherwise leaves the details of the conference programme to the PC.

Business Meeting: At each QIP there is a business meeting that can be attended by all conference participants, to enable the community to influence the future of QIP democratically. There the organizer for the next QIP gives a presentation, and proposals for the venue of the QIP following the next one are presented and discussed, with an advisory vote taken among the participants. The actual decision about the venue is taken by the SC soon after that. Also other organizational matters can be discussed at the business meeting.

The Programme Committee: The role of the Programme Committee (PC) is to select the best submitted papers and to put together a programme for the next QIP. The PC chair chooses the members of the PC (helped by advice from the SC), typically 15 or more people representing the broad range of subfields, both from computer science and from physics. The PC chair determines (in cooperation with the SC) the rules for submission and puts out a call for submissions. The selection of talks among the submitted papers is competitive, with typically between 32 and 50 accepted submissions; it is recommended to keep the number of acceptances minimal but the PC has flexibility to accommodate exceptional breadth and quality of submissions in a given year. The PC can suggest to the SC promotion of a few of the best submitted papers to plenary status, and can distinguish between longer and shorter time slots for the rest (typically 30 and 20 minutes, called *featured* and *contributed* talks, respectively). Poster submissions will generally be accepted unless they are off-topic or clearly wrong, to enable people to obtain funds for travel. At the discretion of the PC, best poster prizes can be awarded.

Typical Conference Outline: On the days immediately preceding the conference, tutorials can take place, typically each a half or a full day of lectures on a specific topic, aimed at students. If no or only limited tutorials can be offered, this has to be decided by the local organizer in conjunction with the SC. The actual conference takes place from Monday to Friday, with (usually) Wednesday afternoon off for scientific discussions and social excursions. Each morning and afternoon session starts with a 40- to 45-minute plenary talk, followed by contributed/featured talks. Each talk is followed by 5 minutes for questions and for setting up the next talk. The poster session(s), business meeting, and a rump session (optional; for short impromptu presentations of very recent results) are held in late afternoons. The poster session forms an integral part of the QIP conference, and activities such as poster prizes or advertisements for excellent posters are encouraged.

Conflict of Interest:

1. SC member cannot be a plenary speaker, but PC members can be plenary speakers.

2. Both SC and PC member are allowed to submit papers and as a paper presenter if the paper submission is accepted.

3. PC members must declare a conflict of interest on certain submissions (such as their own), so that they are not involved in the discussion concerning these papers.

Monday, January 21		Tuesday, January 22		Wednesday, January 23		Thursday, January 24		Friday, January 25	
8:15	Registration	9:00	Ronald de Wolf	9:00	Umesh Vazirani	9:00	Stephen Jordan	9:00	David Gosset
9:00	Opening remarks	9:55	Virginie Lerays	9:55	Roger Colbeck	9:55	Michael Walter	9:25	Victor Veitch
9:25	Ben Reichardt	10:15	Coffee break	10:15	Coffee break	10:15	Coffee break	9:45	Coffee break
10:15	Coffee break	10:40	Aram Harrow	10:40	Rodrigo Gallego	10:40	Fernando Brandão	10:15	Graeme Smith
10:40	Carlos Palazuelos	11:05	Ke Li	11:15	Matthias Christandl	11:15	Norbert Schuch	10:50	William Matthews
11:05	Tom Cooney	11:30	Michael Walter	11:50	Patrick Hayden	11:40	Oleg Szehr	11:15	Marco Tomamichel
11:30	Eric Chitambar	11:50	Lunch break	12:20	Group Photo	12:00	Lunch break	11:40	Ashley Montanaro
11:50	Lunch break	14:00	Thomas Vidick	12:30	Lunch break and free time	14:00	David DiVincenzo	12:10	Lunch break
14:00	Liang Jiang	14:55	Daniel Nagaj			14:55	Olivier Landon-Cardinal	14:20	Fernando Brandão
14:55	Robert Konig	15:15	Coffee break			15:15	Coffee break	15:15	Zeph Landau
16:15	Michael Ben-Or	15:40	Aleksandrs Belovs			15:40	Kamil Michnicki	15:45	Closing remarks
16:40	Michael Kastoryano	16:15	Miklos Santha			16:05	Stephen Bartlett		
17:00	Poster Session 1	16:40	Aleksandrs Belovs			16:25	Break		
		17:00	Poster Session 2	18:00	Conference banquet	16:45	Business meeting		
						19:00	Buffet dinner and rump session		