



Andersa 27, Sopot



# National Quantum Information Centre

**K**rajowe  
**C**entrum  
**I**nformatyki  
**K**wantowej



UNIVERSITY OF GDANSK

On-line Session

*"Current Trends in Quantum Information"*

**May 15, 2020**

# XI Gdańsk **Symposium on Quantum Information**

organized by **KCIK & ICTQT**,

**Sopot**, *May 15, 2020 (on-line)*

***XII Symposium will take place on **May 19 - 21, 2021*****

*during this session :*

\* results of the **KCIK Award 2019**

under the auspices

of Rector of the University of Gdańsk

\* **two keynote talks**

coffe break

\* **three talks of the Laureates**



**UNIVERSITY OF GDANSK**

**KCIK Award** under the auspices of  
**Rector of the University of Gdańsk**  
conferred annually :



**A) Golden Award** (international) – **2020 Euro**  
for solving one of **five problems**  
in *quantum information* concerning:



**UNIVERSITY OF GDANSK**

1. **Mutually unbiased bases** in dimension 6
2. Infinite family of **SIC generalized measurements**
3. **Absolutely maximally entangled** states for 4 quhex
4. Negative partial transpose **bound entangled** states
5. Two-copy **distillability** of two-ququart states

more details at <https://kcik.ug.edu.pl/>

and the preprint arXiv:2002.03233

***Five open problems in quantum information***

*send your  
nomination to  
[kcikaward@ug.edu.pl](mailto:kcikaward@ug.edu.pl)  
before  
January 30, 2021*



# KCIK Award 2019



1) **Distinguished Ph.D. Thesis:**

2) **Bronze Award** - best **Master Thesis:**

3) **Silver Award** - best **Ph.D. Thesis:**



# KCIK Award 2019



1) **Distinguished Ph.D. Thesis: Katarzyna Siudzińska (Toruń)** - *Evolution of open quantum systems governed by unitarily covariant quantum channels* – **12.00**

2) **Bronze Award** - best Master Thesis:

3) **Silver Award** - best Ph.D. Thesis





# KCIK Award 2019



1) **Distinguished Ph.D. Thesis: Katarzyna Siudzińska**  
(Toruń) - *Evolution of open quantum systems governed by unitarily covariant quantum channels* - **12.00**



2) **Bronze Award** - best **Master Thesis: Filip Maciejewski**  
(Warsaw) - *Generalized measurements on quantum devices*  
talk at - **12.30**



3) **Silver Award** - best **Ph.D. Thesis:**



# KCIK Award 2019



- 1) Distinguished Ph.D. Thesis: Katarzyna Siudzińska (Toruń)** - *Evolution of open quantum systems governed by unitarily covariant quantum channels* – **12.00**
- 2) Bronze Award** - best **Master Thesis: Filip Maciejewski (Warsaw)** - *Generalized measurements on quantum devices* talk at - **12.30**
- 3) Silver Award** - best **Ph.D. Thesis: Michał Parniak (Warsaw)** - *Multimode quantum optics with photons, spin waves and phonons* – talk at **13.00**



A) keynote speakers

10.15 - 10.55 **David DiVincenzo** (Juelich): *Blind Oracle Quantum Computation*

11.00 - 11.40 **Nicolas Gisin** (Geneva): *Non-locality in Networks*

11.45-12.00 coffee break

B) talks of Laureates

12.00 - 12.25 distinguished Ph.D. Thesis: **Katarzyna Siudzińska** (Toruń)

*Evolution of open quantum systems governed by  
unitarily covariant quantum channels*

12.30 - 12.55 Bronze prize - awarded Master Thesis: **Filip Maciejewski** (Warsaw)

*Generalized measurements on quantum devices*

13.00 - 13.25 Silver prize - awarded Ph.D. Thesis: **Michał Parniak** (Warsaw)



**and now:** *enjoy the session !*



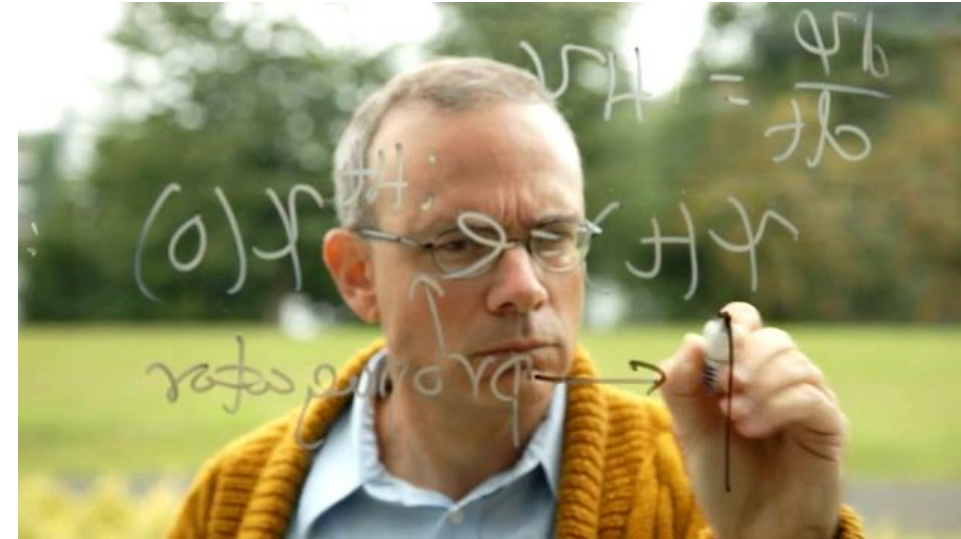
# David DiVincenzo (*Juelich/RWTH Aachen*):

- \* Universal two-qubit gates (1995)
- \* Five *DiVincenzo criteria* for constructing a quantum computer (1996)
- \* *Loss-DiVincenzo quantum computer* working with quantum dots (1997)

... ..

keynote talk:

***Blind Oracle Quantum Computation***



# Nicolas Gisin (Geneva):

*significant achievements in*

- the field of *quantum cryptography* (experimental!)
- the field of *quantum communication*,
- the field of *quantum foundations* (theoretical!)

keynote talk:

***Non-locality in Networks***



Nicolas Gisin

Quantum  
Chance

Nonlocality,  
Teleportation and Other  
Quantum Marvels

Foreword by Alain Aspect

 Springer

# Nicolas Gisin (Geneva):

*significant achievements in*

- the field of *quantum cryptography* (experimental!)
- the field of *quantum communication*,
- the field of *quantum foundations*,

*the field hockey*

(Hockey sur gazon)



photo:  
Mireille  
Gisin-Maye

keynote talk:

***Non-locality in Networks***



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