

2 PhD positions in quantum security analysis

Fri, 2016-12-23 11:20 - [bruss](#) [1] **At:** Institute for Theoretical Physics, University of Duesseldorf, Germany

Deadline: 31 January, 2017

Location

University of Duesseldorf Universitaetsstr. 1

Duesseldorf D-40225 Germany

51° 11' 50.7768" N, 6° 47' 23.5752" E

See map: [Google Maps](#) [2]

Two PhD positions are available at Institute for Theoretical Physics III, University of Duesseldorf, Germany, <http://www.thphy.uni-duesseldorf.de/~ls3/> [3] within BMBF-funded German network "Hardware-based quantum security".

The focus of the first PhD will be on security analyses for quantum key distribution with realistic systems, i.e. in connection to experimental implementations of partners within the BMBF-network. To this aim various methods for the calculation of secret key rates with a general number of signals shall be used and extended. In addition, semi-device-independent scenarios will be studied.

The focus of the second PhD will be on the analysis of authentication protocols using so-called "Quantum Readout of Physically Unclonable Functions". In particular, various possibilities for the readout of complex micro-structures with quantum signals shall be systematically studied. A further goal will be the development and extension of such authentication protocols.

Necessary requirements for both PhD positions: MSc degree in Physics, with excellent marks in quantum mechanics and other topics of Theoretical Physics. Candidates with some knowledge in quantum information theory and/or quantum cryptography are especially suitable.

We offer scientific work in an active research group with various topics in quantum information theory, interaction with partners in the BMBF-network, participation at suitable national and international conferences, salary TV-L E13/2, starting date: from February 2017.

Application: Please send your electronic application with full CV, certificates, letter of motivation and names of two potential referees (i.e. professors who would be willing to provide a short written statement about you) until 31.1.2017 via mail to Prof. Dr. Dagmar Bruss, [bruss\(at\)hhu\(dot\)de](mailto:bruss(at)hhu(dot)de)

- [PhD](#) [4]

Source URL: <http://qurope.eu/db/jobs/2-phd-positions-quantum-security-analysis>

Links:

[1] <http://qurope.eu/users/bruss>

[2] <http://maps.google.com?q=Universitaetsstr.+1%2C+D-40225%2C+Duesseldorf%2C+de>

[3] <http://www.thphy.uni-duesseldorf.de/~ls3/>

[4] <http://qurope.eu/db/jobs/type/phd>