Special Issue

Quantum Cryptography and Applications

Message from the Guest Editors

In 1994, Peter Shor has developed a quantum algorithm to make the public-key cryptosystems that build on top of difficult mathematical problems, such as integer factorization and discrete logarithms that are breakable in practice. In the presence of quantum computers, Shor's algorithm can leverage the parallel nature of quantum gates to efficiently crack the state-of-the-art classical cryptographic techniques in polynomial time, which has raised a serious security concern for the current communication systems. The discovery of Shor's algorithm has led to a boom in quantum cryptography research. Quantum cryptography refers to the design of encryption and decryption systems using the properties of quantum physics to achieve unconditional security. The first quantum key distribution protocol was proposed by Bennett and Brassard in 1984. Since then, various quantum cryptographic communication protocols and applications have flourished. Therefore, this Special Issue aims to publish original scientific articles dedicated to quantum cryptography and its applications.

Guest Editors

Prof. Dr. Chun-Wei Yang
Prof. Dr. Chia-Wei Tsai
Dr. Jason Lin

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Mathematics
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
mathematics@mdpi.com

mdpi.com/journal/mathematics

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Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

Editor-in-Chief

Prof. Dr. Francisco Chiclana
School of Computer Science and Informatics, De Montfort University, The Gateway, Leicester LE1 9BH, UK

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