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Interactions between Group Theory, Symmetry and Cryptology

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Deadline for manuscript submissions:
closed (31 January 2020)

Message from the Guest Editor

Dear Colleagues,

Cryptography lies at the heart of most technologies deployed today for secure communications. At the same time, mathematics lies at the heart of cryptography, as most cryptographic constructions set ground on algebraic scenarios ruled by group or number theoretical laws. Understanding the involved algebraic structures is, thus, essential to design robust cryptographic schemes.

This Special Issue is concerned with the interplay between group theory, symmetry and cryptography. Articles are solicited exploring the links and interactions between group theory, symmetry and cryptology. The topics of this Special Issue include, but are not limited to: The role of symmetry in analyzing the security of cryptographic schemes (such as multivariate post-quantum cryptosystems, hash functions, Boolean functions, etc.), cryptographic constructions using group theoretical tools, group theoretical results having an impact in cryptographic developments, etc.

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Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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CiteScore (2019 Scopus data): 2.5, which equals rank 55/368 (Q1) in 'Mathematics', 25/64 (Q2) in 'Computer Science', 25/54 (Q2) in 'Physics and Astronomy', and 17/31 (Q3) in 'Chemistry'.

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