



Design and Analysis of Symmetric Encryption Modes of Operation

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Message from the Guest Editors

A symmetric encryption mode of operation refers to the method used to transform data larger than a single block using a cipher's single-block operation. The mode of operation plays a crucial role in providing information confidentiality, authenticity, and integrity. This Special Issue of *Symmetry* aims to cover various topics related to symmetric encryption modes of operation. These may include, but are not limited to:

1. Security evaluation and attacks on operation modes and their variants;
2. Application of operation modes or the design of new modes for constructing pseudorandom number generators, hash functions, message authentication codes, cryptographic protocols, and more;
3. Application of operation modes or the design of new modes for data encryption in database buffer pools, cloud data encryption, parallel encryption, data security and privacy protection in federated learning, and other related areas;
4. Analysis of the misuses of operation modes in security schemes or implementations.





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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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