

Special Issue

Queueing Theory in 5G and Beyond: New Applications

Message from the Guest Editor

Performance analysis, packet level control, and optimization tools for dynamic networks are essential for enabling various time-critical services in 5G and beyond. For example, the freshness of the status information of various physical processes collected by multiple sensors is a key performance enabler in many time-critical applications of wireless sensor networks. The traditional metrics, such as throughput and delay, can not fully characterize the information freshness. Information freshness concerns the cases of sampling a real-world random process and transmitting the samples to intended destinations; the key trade-off here is the balance between the frequency of sampling and delay in the delivery of the information. Queueing theory provides the tools and understanding for optimizing packet generation and packet management in networks. This Special Issue provides a platform for researchers from academia and industry to present their novel and unpublished work in the domain of the application of queueing theory in wireless networks.

Guest Editor

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Deadline for manuscript submissions

closed (15 July 2023)



Mathematics

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CiteScore 4.6



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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.

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