TÉCNICO LISBOA

Palestra

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Anfiteatro Abreu Faro, Complexo Interdisciplinar, IST, Lisboa

Mathematical Modelling Issues in Future Multiservice Networks

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RESUMO

Over the past few years, there has been an increasing level of research activities worldwide to design and performance analysis for the future multiservice networks, namely M2M and D2D communications over the LTE networks, P2P live streaming networks. The talk outlines how mathematical models are being used to address current issues concerning quality of service and performance parameters of the modern and future networks, including wireless networks. We shall first show models based on the teletraffic and queuing theory and reflecting key features of admission control mechanisms in the LTE network. We also show some stochastic geometry problems of the interference analysis in D2D wireless networks. Then we discuss the analysis for Licensed Shared Access (LSA) regulatory framework, and also resource allocation in wireless networks with random resource requirements. Finally, we are discussing the problem of peer-to-peer streaming network simulation taking into account several types of selection strategies: neighbor selection strategy, peer selection strategy and chunk selection strategy. There should be great opportunities for the scientific community to contribute to solution of these problems in the forthcoming decade.

BIO

Yuliya Gaidamaka received the Ph.D. in 2001 and Doctor of Sciences degree in 2017 in Mathematics from the Peoples' Friendship University of Russia (RUDN University). Since 2001, she has been an associate professor in the university's Applied Probability and Informatics Department. She is the author of more than 50 scientific and conference papers, co-author of the monograph on multiplicative solutions of finite Markov chains. Her current research focuses on performance analysis of 4G/5G networks and M2M communications, P2P networks, signalling networks congestion control, queuing theory, and mathematical modelling of wireless networks. She is the author of more than 50 scientific and conference papers and one book.

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