

Department of Electrical and Computer Engineering

Title: «Resource Allocation in multiuser broadband systems under physical layer security QoS »

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Room KENTP. - A008, Old Campus
University of Cyprus

Abstract:

Physical layer security has drawn much attention during the last years as a way to provide secure communications in the wireless networks. Physical layer security techniques promise security and eavesdropping prevention by an information theoretic approach. Their main advantage versus the cryptography-based, traditional approaches lies on the fact that they are independent of the interception and processing ability of the eavesdropper. In this work, it is investigated the integration of physical layer security context into the problem of resource allocation in multiuser, MIMO broadcast systems. Focus on optimizing the performance of such systems under security-aware QoS constraints, a number of PHY layer techniques are presented concerning user scheduling, precoding, power allocation etc. Numerical results confirm the benefits of a proper resource management design in both security and reliability aspects.

Biography:

Sotiris Karachontzitis received the Computer Engineering & Informatics diploma and M. Sc. degree in Signal & Image Processing Systems from University of Patras, Greece in 2004 and 2008, respectively. He is currently a Ph.D. candidate in the Department of Computer Engineering and Informatics, University of Patras under the supervision of Prof. Kostas Berberidis. His research interests include resource allocation and cross layer design in OFDMA-based wireless systems and signal processing techniques in MIMO multiuser systems. He is a student member of IEEE and a member of the Technical Chamber of Greece.