

Séminaire ETIS : Laura Luzzi

04 Février 2014, 10:45 – 11:45

Titre du séminaire et oratrice

Coding for physical layer security.

Laura Luzzi, ETIS, équipe ICI.

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Date et lieu

Mardi 4 février 2014, 10h45.

Université de Cergy-Pontoise, site de St-Martin 2, amphi des colloques.

Abstract

In traditional communication systems, reliability is ensured by coding at the physical layer, while security is guaranteed by encryption protocols at the MAC and network layer. Information-theoretic techniques have shown however that the randomness inherent in physical channels can be exploited to provide an additional level of security. Physical layer security replaces computational secrecy with Shannon's information-theoretic secrecy, meaning that even an eavesdropper having unlimited computational resources cannot extract any information from the channel.

This seminar will introduce the basic concepts of information-theoretic security with an emphasis on coding problems. After presenting the classical wiretap channel model proposed by Wyner, we will review some recent advances in the design of practical wiretap codes.

Short bio

Laura Luzzi is currently an Assistant Professor of Digital Communications at ENSEA in Cergy, and a researcher at Laboratoire ETIS. She received the degree in Mathematics from the University of Pisa, Italy, in 2003 and the Ph.D. degree in Mathematics for Technology and Industrial Applications from Scuola Normale Superiore, Pisa, Italy, in 2007. From 2007 to 2011 she held postdoctoral positions in Télécom-ParisTech, Paris, France, and at the Alcatel-Lucent Chair on Flexible Radio at Supélec, France. From 2011 to 2012 she held a Marie Curie Intra-European Fellowship for Career Development at Imperial College London, United Kingdom.

Her research interests include algebraic space-time coding and decoding for wireless communications and physical layer security.

