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The Department of Automatic Control & Systems Engineering
is pleased to announce the following seminar:

Feedback in Distributed Wireless Networks

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Lyon, France*

Friday 2nd May 2014 at 14:00
LT02, Sir Henry Stephenson Building

Abstract

In this talk, the use of feedback in distributed wireless networks is discussed using tools from information theory and game theory. In particular, the two-user Gaussian decentralized interference channel (DIC) is adopted as a study case in which a transformative role of feedback emerges: harnessing interference as side information. This allows us to show that thanks to the use of feedback, Pareto optimal operating points are achievable even in fully decentralized networks. Finally, we show that the existence of a feedback link is not a sufficient condition for improving the performance, i.e., achievable transmission rates at a Nash equilibrium, with respect to the case in which feedback is not available. Indeed, particular conditions are required for feedback to be beneficial in DICs. These conditions are presented using illustrative examples to provide useful insight about these results

Biography

Samir M. Perlaza is a research scientist with the Institut National de Recherche en Informatique et Automatique (INRIA), France. He received the M.Sc. and Ph.D. degrees from Ecole Nationale Supérieure des Télécommunications (Telecom ParisTech), Paris, France, in 2008 and 2011, respectively. Previously, from 2008 to 2011, he was a Research Engineer at France Télécom - Orange Labs (Paris, France) and he has held long-term academic appointments at the Alcatel-Lucent Chair in Flexible Radio at Supélec (Gif-sur-Yvette, France); at Princeton University (Princeton, NJ) and at the University of Houston (Houston, TX). His research interests lie in the overlap of signal processing, information theory, game theory and wireless communications. Dr. Perlaza was a recipient of an Alban Fellowship of the European Union in 2006 and the Best Student Paper Award in Crowncom in 2009.

*Refreshments will be available following the talk in the
Foyer of the Sir Henry Stephenson Building*