

Séminaire ICI : Alexandre Graell-i-Amat

14 Septembre 2012, 10:30 – 12:00

Titre du séminaire et orateur

"Spatially Coupled LDPC Codes for Two-User Decode-and-Forward Relaying"
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Date et lieu

Vendredi 14 septembre 2012, 10h30.
ENSEA, salle 384.

Abstract

In this talk, we discuss bilayer spatially coupled LDPC (SC-LDPC) codes for relaying. We first briefly introduce the basic concepts of cooperative communications and distributed coding and of SC-LDPC codes. We then present a decode-and-forward transmission scheme based on SC-LDPC codes for a half-duplex relaying network with two sources, one relay and one destination. The relay performs network coding to achieve full diversity. We prove that the proposed scheme achieves the Shannon limit on the binary erasure relay channel for symmetric channel conditions. Furthermore, using density evolution, we demonstrate that our scheme approaches capacity also for asymmetric channel conditions. We finally show some results for the case where the two sources are correlated