

Séminaire ICI : David Declercq

21 Février 2012, 14:00 – 15:30

Titre du séminaire

Multi-Relay Cooperative NB-LDPC coding with Non-Binary Repetition Codes

Date et lieu

Mardi 21 février 2012, 14h.

[ENSEA](#), salle 384.

Abstract

In this talk, we present a system based on nonbinary Low-Density Parity-Check (LDPC) codes to communicate efficiently over the multiple-relay fading channels, with a simple joint decoding strategy at the receiver end. The particularity of our approach is to rely on non-binary LDPC codes at the source, coupled with multiplicative non-binary local codes at the relays, such that the joint decoding complexity is not increased compared to a system without relays, while preserving the coding gain brought by the re-encoding of the sequence at the relays. We show by simulations on simple configurations that this cooperative scheme is superior than other techniques proposed in the literature, and close to the Gaussian relay channel capacity, even at moderate codeword lengths.