

One year Full-Time Post-doctoral Position

at Telecom ParisTech

Precoding for Multi-User Massive MIMO Systems

Context and research subject

Multi-user Massive MIMO has been proposed to answer the increase of spectral efficient demand to met the 5G requirements. Massive MIMO employing suitable precoding techniques can yield large gains in spectral efficiency (SE) and energy efficiency (EE) as compared to conventional MIMO systems, as the effects of noise and interference are negligible when the number of antennas approaches infinity. But, some limitations due to the realistic urban environment induce a decrease on the obtained gains. A massive MIMO wireless system could use a single-cell (SC) or a multi-cell (MC) structure. In this work, we will be interested to **multi-cell scenario** with collaborative BSs. considering constraints as provided backhaul, cluster size, shared CSI, we aim to design an efficient non linear precoding based on lattice-aided methods offering very low complexity.

The proposed research work makes part of a collaborative project with Nokia, led by Prof. Ghaya Rekaya-Ben Othman. The main objective of this project consists in proposing innovative precoding techniques for MU-Massive MIMO systems leading to patents and publications.

Requirements

To be eligible for the postdoctoral position, the candidate must possess a doctoral degree in electrical engineering. The applicant should have published Transaction articles and in flagship IEEE conferences. Moreover the applicants must have excellent analytical background and a drive to pursue fundamental research. Expertise in the wireless systems and solid background in Digital Communication is a major advantage. Skills with experience using C and /or Python programming may be very advantageous.

Salary

The research grant is awarded for 12 months and its monthly net salary is about 2200€.

Application

Applications must be send by email, with the following attachments as separate pdf files :

1. Complete CV containing contact information of at least two referees
2. Motivation letter (prior knowledge, research interests and career plans)
3. Certificates/Diplomas : Scanned copies of diplomas and transcripts of the records of relevant previous degrees
4. Representative publications (maximum 2 articles)

Contact

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