Scientific Report

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I – SCIENTIFIC ACTIVITY DURING YOUR FELLOWSHIP

The research activities have been related to two topics:

- Dual-hop relay networks
- Multihop relay networks

For the first topic, the activity focused on the study of the performance of dual-hop relay networks. The relay operates in an amplify-and-forward fashion. Multiple interferers affect the received signal at the relay and at the destination. The different fading links are modelled as Nakagami distributed channels. The performance analysis of this communication system includes the study of the bit error probability (BEP) of the system and an analytical expression have been derived for the BEP.

In the second research topic, the activity explores the performance of multihop amplify-and-forward relay networks. The relay network is composed of a source node, a relay node, and N relay nodes. The fading link for each hop is modelled as a Nakagami distributed channel. Several interferers affect each relay as well as the destination node. The aim of our investigation was to derive expressions for the outage probability and the BEP of the multihop relaying system. To get a better insight on the system performance upper-bounds on the BEP have been derived.

II – PUBLICATION(S) DURING YOUR FELLOWSHIP

Accepted for Publication:


Under Review:

- Ali Chelli, Kimmo Kansanen, and Mohamed-Slim Alouini “Bit Error Probability of Multihop Relaying with Co-Channel Interference over Nakagami-m Fading” IEEE Transactions on Wireless Communications
III – ATTENDED SEMINARS, WORKHOPS, CONFERENCES
As a listener:
- Various seminars at the Department of Electronics and Telecommunications, NTNU, Trondheim, Norway.

As a speaker:
- One seminar at the Department of Electronics and Telecommunications, NTNU, Trondheim, Norway.

IV – RESEARCH EXCHANGE PROGRAMME (REP)
I was planning to have a research stay at INRIA in Avignon but due to some problem related to my residence visa, this internship was cancelled.