Invitation à la soutenance publique de thèse

Pour l’obtention du grade de Docteur en Sciences de l’Ingénieur

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Multi-Dimensional Radio Channel Models for Distributed Communication

Single- and multi-antenna indoor systems have been designed and used for various applications for some years now, but still there is a room for improvements. Channel modeling is one of the aspects where researchers and engineers face many challenges.

This thesis develops innovative modeling approaches for dynamic indoor radio channels. Given the complexity of the global channel, various aspects have been investigated separately, based on different measurement campaigns at 3.8 GHz. However, all these models share the same formalism and can be thought as extensions of a reference narrowband representation. The contributions address therefore

• the non-stationary dynamics of narrowband channels: the new methodology combines an accurate composite fading distribution with a new shadowing model and a Markov chain approach to account for non-stationarity,

• the MIMO channel dynamics, highlighting the temporal variations of the directional behavior of the channel, linking these with the narrowband fading statistics investigated earlier,

• the wideband channel dynamics, relying on an original hybrid model extending the narrowband model by means of the room electromagnetics theory.

Membres du jury :

Prof. Claude Oestges (UCL), promoteur
Prof. Wout Joseph (UGent), promoteur
Prof. David Bol (UCL), président
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