Towards a Spatially Aware Stochastic Channel Model for Body to Body Communications in Indoor Environment

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Abstract:

This paper presents the preliminary results of Body to Body channel modeling, based on a novel extensive measurement campaign in an indoor environment in the ISM $2.4GHz$ band, involving up to 4 bodies. The peculiarity of B2B channels requests the extension of classical stochastic models towards a model that is aware of the reciprocal position and orientation of the bodies wearing the terminals. To reach this goal, three on-body antenna positions (head, belt and wrist) and multiple human mobility scenarios have been investigated in the measurements. Results of the spatially aware characterization of Path-Loss, short and long term fading are presented for some of the measured links in an office environment.