Signal Correlation and Power Imbalance in Dynamic On-Body Communications

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Abstract:

Body Area Networks (BANs) are the incoming future in wireless communications. This paper uses a full wave simulator, combined with animation software, to analyse the on-body channel in realistic dynamic scenarios (walking and running). The changes in the signal correlation and power imbalance among on-body channels are gathered during the motion and compared with results for the standing body. Generally, the movement decreases the correlation between the branches. In the run scenario, the correlation and the power imbalance show a lower spread of values, being most favourable for MIMO.