

A Dynamic Channel Model for Indoor Wireless Signals: Working Around Interference Caused by Moving Human Bodies

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Abstract

The use of indoor wireless devices has substantially increased in recent years. This escalation is due to the expansion of traditional communication devices, such as mobile phones and laptop computers, to less traditional ones, such as wirelessly communicating sensor nodes present in smart homes, office buildings, and industrial environments. The placement of these nodes varies considerably from one application to the next, but, when the nodes are placed indoors and within the vicinity of human height, a body's movement can cause significant time-varying channel conditions. The movement is even more compelling in such networks because of the power constraints involved [1]. Thus, an accurate study on the impact of a moving body and the characteristics of indoor propagation channels is important.