

In-band Full Duplex Power Line Communications

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Abstract

In-band full duplexing enables simultaneous transmission and reception in the same frequency band. It has long been used in communication systems, most notably in the plain ordinary telephone system. In this presentation, we will discuss in-band full duplexing for broadband power line communications. We will outline that the main challenges for its application are the poor self-interference suppression through hybrid circuits and the requirements on the level of accuracy of the interference cancellation. We will present structures for digital and digitally controlled interference cancellation that are effective in enabling in-band full duplexing for broadband power line communications. We will also illustrate applications of in-band full duplexing that show its potential beyond data rate improvements.