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# Experiment-driven Characterization of Full-Duplex Wireless Systems

Melissa Duarte, Chris Dick, Ashutosh Sabharwal

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We present an experiment-based characterization of passive suppression and active self-interference cancellation mechanisms in full-duplex wireless communication systems. In particular, we consider passive suppression due to antenna separation at the same node, and active cancellation in analog and/or digital domain. First, we show that the average amount of cancellation increases for active cancellation techniques as the received self-interference power increases. Our characterization of the average cancellation as a function of the self-interference power allows us to show that for a constant signal-to-interference ratio at the receiver antenna (before any active cancellation is applied), the rate of a full-duplex link increases as the self-interference power increases. Second, we show that applying digital cancellation after analog cancellation can sometimes increase the self-interference, and thus digital cancellation is more effective when applied selectively based on measured suppression values. Third, we complete our study of the impact of self-interference cancellation mechanisms by characterizing the probability distribution of the self-interference channel before and after cancellation.

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*Which authors of this paper are endorsers?*