

On Marton's Inner Bound to the Capacity Region of the Broadcast Channel

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Abstract

A broadcast channel is a fundamental communication scenario where a single transmitter communicates with multiple receivers. Determining the capacity region of the broadcast channel has been a longstanding open problem in information theory. Marton's inner bound remains the best known inner bound to the capacity region of a general two-receiver broadcast channel.

In this talk, I will provide a high-level overview of the progress that has been made in understanding Marton's inner bound and the capacity region of the two-receiver broadcast channel over the past two decades. Additionally, I will discuss some conjectures and open questions in this area.