

On Reliability Function of BSC with Noisy Feedback

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For information transmission a binary symmetric channel is used. There is also another noisy binary symmetric channel (feedback channel), and the transmitter observes without delay all the outputs of the forward channel via that feedback channel. The transmission of an exponential number of messages (i.e. the transmission rate is positive) is considered. The achievable decoding error exponent for such a combination of channels is investigated. It is shown that if the crossover probability of the feedback channel is less than a certain positive value, then the achievable error exponent is better than the decoding error exponent of the channel without feedback.

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