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On the Communication Exponent for Distributed Hypothesis Testing

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Consider a scenario where two observers observe local data samples and wish to distinguish between two possible joint distributions according to which the data samples are generated. There is, in general, a trade-off between the number of bits to be communicated between the two observers and the probability of their correctly identifying the true joint distribution. We analyze a type of schemes where one observer simply sends an index---pointing to a specific part of the data---to the other observer, and compare them to some classic schemes based on quantization.

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