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History of Long Block Codes

In the first two decades following Shannon's classic 1948 paper, there were numerous studies aimed at determining the theoretical limitations on the performance of long block codes over a variety of channels, with and without such embellishments as list decoding or noiseless feedback. Concurrently, techniques to construct specific classes of block codes were introduced by Hamming, Elias, Reed–Muller, Bose–Chaudhuri–Hocquenhem, Reed–Solomon, and Gallager. Decoding algorithms, implementations, and applications came later.

This two-part talk will review some of the salient parts of this history, and identify a few of the problems which are still not completely solved.