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High rate locally-correctable and locally-testable codes

We study local algorithms for error correcting codes in the high rate regime. The tradeoff between the rate of a code and the locality/efficiency of its decoding and testing algorithms has been studied extensively in the past decade, with numerous applications to theoretical computer science.

In this talk I will discuss some recent results giving efficient sub-polynomial query decoding and testing algorithms for high rate error correcting codes. I will also highlight some of the most interesting challenges that remain.

Based on joint work with Swastik Kopparty, Or Meir and Noga Ron-Zewi