

A Construction of Optimal Quasi-cyclic Locally Recoverable Codes using Constituent Codes

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A locally recoverable code of locality r over $\mathbb{F}_q$ is a code where every coordinate of a codeword can be recovered using the values of at most r other coordinates of that codeword. Locally recoverable codes are efficient at restoring corrupted messages and data which make them highly applicable to distributed storage systems. In this talk, we decompose quasi-cyclic locally recoverable codes into a sum of constituent codes where each constituent code is a linear code over a field extension of $\mathbb{F}_q$. Using these constituent codes with set parameters, we propose conditions which ensure the existence of optimal quasi-cyclic locally recoverable codes with increased dimension and code length.

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