

Forschungspraxis

Locality in Repeated-Root Cyclic Codes

Locally repairable codes (LRC) are used in distributed storage systems to decrease the complexity of repair if a small number of servers in the system fails. Such LRCs have been constructed by several different methods, e.g., through rank-metric codes, Reed-Solomon codes, or cyclic codes. For the latter, the construction of [1] considers the well known definition of cyclic codes and shows how to obtain LRCs by appropriate choice of the parameters. The goal of this work is to extend this approach to cyclic codes with roots of higher multiplicity.

[1] Tamo, Itzhak, et al. "Cyclic LRC codes and their subfield subcodes." 2015 IEEE International Symposium on Information Theory (ISIT). IEEE, 2015.

Advisors

Lukas Holzbaur, Hedongliang Liu