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A CLASS OF CAYLEY GRAPH INTERCONNECTION NETWORKS BASED ON ROSENBLOOM- TSFASMAN METRIC

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Rosenbloom and Tsfasman introduced a new metric (RT metric) which is a generalization of the Hamming metric. In this paper we propose a Cayley interconnection network based on the RT metric. We also introduce a new family of Cayley graphs on symmetric groups with respect the RT metric. We also describe various algebraic and topological properties of these networks and propose optimal routing algorithm. This paper has five sections. Section one is introductory in nature. Second section gives basic concepts about distance graphs. The new notion of Cayley graphs of Z_q^n based on RT metric is described in this section. A simple routing algorithms given in section three. New results on Cayley graphs of S_n based on RT metric is proved in section group. Conclusions based on our study is given in the final chapter.

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