The Implementation and Improvement of List Decoding of Reed-Solomon Codes

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ABSTRACT

Reed-Solomon codes are known for their powerful correct error capacity. Several years ago, the innovative notion of decoding delivered by Madhu Sudan was probably beyond the original bound. Years later, Ron M. Roth and Gitit Ruckenstein presented a new decoding algorithm according to the Madhu Sudan ’ s concept. In this paper, the research is based on the list decoding of RS codes which is presented by some predecessors. The list decoding of an RS code is complicated. Consequently, the modified list decoding is proposed and carried out by VDHL language and C program. Eventually, the comparison and analysis of improved decoder are apparently presented the elevated efficiency.

Keywords : list decoding ; interpolation ; factorization

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