

Locally recoverable codes from towers of function fields

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Abstract

In this work, we construct sequences of locally recoverable AG codes arising from a tower of function fields and give bounds for the parameters of the obtained codes. In a particular case of a tower over \mathbb{F}_{q^2} for any odd q , defined by Garcia and Stichtenoth, we show that the bound is sharp for the first code in the sequence. We include a detailed analysis for the following codes in the sequence based on the distribution of rational places that split completely in the considered function field extension.