HYBRID ARQ SCHEMES USING MRD CODES

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Maximum Rank Distance Codes (MRD codes) are a newer class of algebraic codes. We obtain an efficient multicast hybrid ARQ scheme using the error erasure-decoding algorithm for MRD codes incorporating it in the Metzner’s scheme. In Metzner’s scheme k data frames are encoded by a \([n, k]\) MDS code to obtain \(n-k\) redundant frames. The transmitter first sends the k-data frames to all the receivers. When there exists one or more receivers with erroneously received data frames, the transmitter then sends the redundant frames one by one until every receiver has at least k-frames without errors. An erasure only decoding algorithm is used to correct errors in the k-data frames. Thus Metzner’s scheme can correct errors in one particular data frame. In this paper we introduce a new efficient multicast hybrid ARQ scheme by incorporating the new decoding error-erasure algorithm for MRD codes with Metzner’s scheme.