MODELS OF MULTI–USER WRITE–EFFICIENT MEMORIES AND GENERAL DIAMETRIC THEOREMS

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Abstract

Write–efficient memories (WEM) were introduced by Ahlswede/Zhang as a model for storing and updating information on a rewritable medium.

We strengthen the capacity theorem by providing a full control of the rates of the spreads. Next we adress and settle the storage capacity region problem under the average costs constraint in the case of many users, who write on the memory in an arbitrary order, if neither the encoder nor the decoder knows the previous content of the memory. The combinatorial essence is a diametric theorem for several families.

Finally we present a storage capacity theorem for several persons using the memory in cyclic order.