Abstract

The short covering Problem for Finite Chain rings with respect to the RT-metric

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In this work, the cardinality of the minimal short R-covers of finite chain rings with respect to the Rosenbloom Tsfasman metric is established. In doing so, first a result published by Nakaoka and Dos Santos about the zero-short covering problem for the ring $\mathbb{Z}_n$ is extended to finite chain rings. Then, a connection between R-short covers of rings with respect to the RT-metric and the zero-short covers of rings is obtained. This connection is then used to solve the problem of R-short covers of finite chain rings with respect to the RT-metric.