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Nicholas J Werner* (nwerner@newark.osu.edu). *Covering Numbers of Finite Rings.*

Any finite non-cyclic group G is equal to a union of its proper subgroups. The covering number of G is the minimum number of subgroups necessary to cover G . Covering numbers are known for several classes of finite groups, and the computation covering numbers is a problem of current interest.

In this talk, we discuss the analogous question for finite rings. In general, not much is known. We say that a finite (associative, unital) ring R is coverable if it is equal to a union of its proper subrings, and the covering number of R is the minimum number of subrings required to cover R . Not every finite ring is coverable, and it is nontrivial to decide whether R is coverable. We will determine the covering number for R when R is coverable and equal to a direct product of finite fields. We will also present other examples and mention some avenues for further research. (Received May 26, 2014)