

Profinite permutation \mathbb{Z}_p -lattices for finite p -groups

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Resumo

For a finite group G , the representation theory of the integral group ring $\mathbb{Z}_p G$ is in a formal sense frequently impossible to understand. One therefore tries to deal with a general module U by approximating it with modules that are “easier”. One such class of modules consists of those \mathbb{Z}_p -free modules having a \mathbb{Z}_p -basis that is preserved by the action of G , the $\mathbb{Z}_p G$ “permutation lattices”. Already these modules are not well-understood. A theorem of Alfred Weiss from 1988 gives a detection theorem for finitely generated permutation $\mathbb{Z}_p G$ -lattices when G is a finite p -group. We show that the same detection theorem applies for arbitrary profinite $\mathbb{Z}_p G$ -lattices for finite p -groups G .