Diagramatic and topological methods in the decision problem for modules

Annalisa Marcja-Carlo Toffalori

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Dipartimento di Matematica U.Dini, Viale Morgagni 67/A, 50134 Florence (Italy) e-mail: marcja@udini.math.unifi.it

Dipartimento di Matematica e Fisica, Via Madonna delle carceri, 62032 Camerino (Italy) email: toffalori@campus.unicam.it

Here we explore the use of diagramatic and topological methods within the model theory of lattices (i.e. R-torsionfree finitely generated modules) over group rings RG where G is a finite group and R is a Dedekind domain. In particular, first we obtain some partial decidability results when a Sylow 2-subgroup of G is noncyclic of order 4 (and G is not a 2-group), then we discuss how to define a Ziegler topology in this setting and we study the outcoming topological space for certain choices of G.