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Representation of the category of internal abelian group objects in the category of $\Omega$-sets.
(Chinese. English summary) Zbl 07448782

Summary: In this paper, we discuss some properties of the category of internal abelian group objects in a category with finite product. The representation theorem of the category of internal abelian group objects in the category of sets is studied. Furthermore, the representation of the category of internal abelian group objects in the category of $\Omega$-sets is investigated, and the isomorphic relation between the category of internal abelian group objects in the category of $\Omega$-sets and the category of $\Omega$-abelian groups is given.

MSC:
18E10 Abelian categories, Grothendieck categories
20K40 Homological and categorical methods for abelian groups

Keywords:
internal abelian group; $\Omega$-set; $\Omega$-Abel group; category representation