Hill, Paul

The classification of N-groups. (English) Zbl 0545.20042

Houston J. Math. 10, 43-55 (1984).

Let G be a direct sum of countable abelian groups (d.s.c.). We call a subgroup H an N-group if it satisfies the conditions: (i) H is isotype in G. (ii) $p^{\alpha}(G/H) =< p^{\alpha}G, H > /H$ if $\alpha < \Omega, andp^{\Omega+1}(G/H) = 0$. (iii) G/H is totally projective.

The following are the main results: Theorem 1. An N-group is determined by its Ulm invariants together with its Ω-number. Theorem 2. There exists an N-group H with Ω-number $\mathcal{M}$ that satisfies, for each α, $f_{\alpha}(H) = f(\alpha)$ if and only if $f(\alpha)$ is an admissible function of length not exceeding Ω such that $\sum_{\alpha>\lambda} f(\alpha) \le \mathcal{M}$ for all countable λ. Theorem 3. A summand of an N-group is an N-group. Theorem 4. If A and B are N-groups, then Tor(A,B) is a d.s.c.

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MSC:

20K25 Direct sums, direct products, etc. for abelian groups
20K99 Abelian groups
20K27 Subgroups of abelian groups

Keywords:

direct sum of countable abelian groups; Ulm invariants; N-groups