A Hausdorff topological group $G$ is called minimal, if $G$ satisfies the open mapping theorem with respect to continuous isomorphisms with domain $G$. Morris and Pestov introduced the notion of locally minimal group [S. Morris et al., Colloq. Math. 78, No. 1, 39–47 (1998; Zbl 0917.22003)]. D. Dikranjan, M. Megrelishvili and others asked whether does the group $\oplus_{i=1}^{\infty} Z(p^i)$ admit a non-discrete locally minimal group topology? The main result the paper under this review is the next theorem. Let $n$ be a positive integer and $G$ an infinite abelian group such that $nG = 0$ and $|G| < 2^\omega$, then the only locally minimal group topology on $G$ is the discrete topology. The author give the full description of bounded abelian groups admits only discrete locally minimal group topology. The author ask does the group $\oplus_{i=1}^{\infty} Z(p^i)$ admits a non-discrete locally minimal group topology and he give a partial answer to this question.

Reviewer: Nikolay I. Kryuchkov (Ryazan)

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References:


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