Title: On a characterization theorem on Abelian groups

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Let $\xi_1, \xi_2, \ldots, \xi_n$, $n \geq 2$ be independent identically distributed random variables. It is well known that if $\bar{\xi} = \frac{1}{n} \sum_{j=1}^{n} \xi_j$ and $\mathbf{v} = (\xi_1 - \bar{\xi}, \xi_2 - \bar{\xi}, \ldots, \xi_n - \bar{\xi})$ are independent, then all ξ_j are Gaussian. We give a complete description of second countable locally compact Abelian groups for which a group analogue of this characterization theorem holds true.

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