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When a locally compact monothetic semigroup is compact. (English) Zbl 1465.22002
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Summary: A semigroup endowed with a topology is monothetic if it contains a dense monogenic subsemigroup. A semigroup (group) endowed with a topology is semitopological (quasitopological) if the translations (the translations and the inversion) are continuous. If $S$ is a nondiscrete monothetic semitopological semigroup, then the set $S'$ of all limit points of $S$ is a closed ideal of $S$. Let $S$ be a locally compact nondiscrete monothetic semitopological semigroup. We show that (1) if the translations of $S'$ are open, then $S'$ is compact, and (2) if $S'$ can be topologically and algebraically embedded in a quasitopological group, then $S'$ is a compact topological group.

MSC:
22A15 Structure of topological semigroups
20M99 Semigroups

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References:

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