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On finite powers of countably compact groups

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Abstract: We will show that under $MA_{countable}$ for each $k \in \mathbb{N}$ there exists a group whose k-th power is countably compact but whose 2^k-th power is not countably compact. In particular, for each $k \in \mathbb{N}$ there exists $l \in [k, 2^k)$ and a group whose l-th power is countably compact but the $l+1$-st power is not countably compact.

Keywords: countable compactness, $MA_{countable}$, topological groups, finite powers
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