

Cantor Spectrum for a Generic 1D Almost Periodic Continuum Schroedinger Operator with Given Frequencies

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Abstract

Let G be a dense subgroup of the group $(\mathbb{R}, +)$ and $\text{AP}_G(\mathbb{R})$ the real Banach space of all real-valued almost periodic functions on \mathbb{R} whose all frequencies are in G , with the sup norm. Denote the self-adjoint Schroedinger operator on the real line with the potential $v(x)$ by H_v .

Theorem. *There exists a dense G_δ subset $X \subset \text{AP}_G(\mathbb{R})$, such that for all $v \in X$ the operator H_v has a nowhere dense spectrum.*