

# One-dimensional Schrödinger operators with $\delta'$ -interactions on Cantor-type sets

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We introduce a novel approach for defining a  $\delta'$ -interaction on a subset of the real line of Lebesgue measure zero which is based on Sturm–Liouville differential expression with measure coefficients. This enables us to establish basic spectral properties (e.g., self-adjointness, lower semiboundedness and spectral asymptotics) of Hamiltonians with  $\delta'$ -interactions concentrated on sets of complicated structures. A criterion for the negative spectrum to be finite (infinite) will be presented. Discreteness criteria of such Hamiltonians on the semi-axes will be discussed, too.