

## Paley-Wiener Theorem and Sturm-Liouville Transforms

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This talk is devoted to a class of integral transforms arising from a singular Sturm-Liouville problem

$$y'' - q(x)y = -\lambda y, \quad x \in (a, b)$$

in the limit-point case at one end or both ends of the interval  $(a, b)$ . We present a complete solution of the problem of characterization of the image of a function that has compact support and also of a function that vanishes on some interval under this class of transforms. The characterizations are obtained with no restriction on  $q(x)$  other than being locally integrable and are much simpler than the previous characterizations given by the author and his associates.