

Averaging of spectral measures associated with the Weyl-Titchmarsh m -function

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We consider averages of spectral measures of the form

$$\kappa(A) = \int_a^b \rho_\theta(A) d\nu(\theta),$$

where $\{\rho_\theta\}$ is a family of spectral measures associated with the Weyl-Titchmarsh m -function for the Schrödinger equation on the half-line, and ν is an arbitrary Herglotz measure. We show that the measure κ corresponds to a composition of Herglotz functions, and we examine the properties of κ by considering the boundary values of the functions undergoing composition. We give precise conditions for absolute continuity and the discrete part of κ .

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