HIGHER DERIVATIVES OF SPECTRAL FUNCTIONS ASSOCIATED WITH A CLASS OF ONE-DIMENSIONAL SCHRÖDINGER OPERATORS

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We investigate the existence and asymptotic behaviour of higher derivatives of the Weyl-Titchmarsh spectral function on the positive real axis, in the context of one-dimensional Schrödinger operators on the half-line with integrable potentials. In particular, we identify sufficient conditions on the potential for the existence and continuity of the n^{th} derivative of the spectral function, and outline a systematic procedure for estimating numerical upper bounds for the turning points of such derivatives. We illustrate the talk by an explicit example which demonstrates the potential relevance of the investigation.