

AN INVERSE SPECTRAL PROBLEM ASSOCIATED WITH THE ONE-DIMENSIONAL SCHRÖDINGER OPERATOR

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We consider the one-dimensional Schrödinger operator on the half-line with a real boundary condition at the origin. Our approach uses the Riccati equation to recover the potential from knowledge of related spectral derivatives at suitable values of the spectral parameter on the real axis.

The results are established for (i) the case where the absolutely continuous spectrum is non-empty, (ii) the case where the operator is bounded below, and explicit examples are given to illustrate the theory. This is joint work with B. J. Harris, Northern Illinois University.