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**Asymptotics of Eigenvalues
of Non-Self-Adjoint Schrödinger Operators
on a Half-Line**

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Abstract. We study the eigenvalues of the non-self-adjoint problem

$$-y'' + V(x)y = Ey$$

on the half-line $0 \leq x < +\infty$ under the Robin boundary condition at $x = 0$, where V is a monic polynomial of degree at least 3. We obtain a Bohr-Sommerfeld-like asymptotic formula for E_n that depends on the boundary conditions. Consequently, we solve certain inverse spectral problems, recovering the potential V and boundary condition from the first $(m + 2)$ terms of the asymptotic formula.

Keywords. Non-self-adjoint Schrödinger operators, Robin boundary condition, asymptotics of eigenvalues.

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