A Study of the Lippmann-Schwinger Equation and Spectra for Some Unbounded Quantum Potentials

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We study the modified Lippmann-Schwinger Equation for certain model potentials V defined on $\mathbb{R}^3$, not of Rollnik class, and solutions to the equation in a weak sense. Further, we study the resolvent and the spectrum of the operator $H = -\Delta + cV$ in our model for non-zero constants c. In particular, we find that for sufficiently small $c > 0$, H has no singular spectrum.