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Review text:

The necessity of the proofs of the reality of spectra for certain non-Hermitian Hamiltonians emerged in connection with the emergence of certain very strange (viz., asymptotically imaginary cubic) potentials $V(x) = \mathrm{i}\,x^3$ in relativistic field theory. The recent resolution of this particular problem (cf. refs. [19] and [17]) re-attracted attention to many similar Schrödinger equations. For their interesting subset with polynomial $V(x)$ [such that, at the large x, one has Im $V(x) \approx g\,x^{2r-1}$ while the real part of $V(x)$ happens to be sufficiently quickly growing, Re $V(x) \approx x^{4r+2}$ (or more)], the authors noticed that the imaginary part of $V(x)$ is relatively bounded. This alowed them to prove, using perturbative construction with non-vanishing circle of convergence, the reality of the spectrum for not too large strengths g of non-Hermiticity.