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Short title: Constructive inversion of energy trajectories in quantum mechanics
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Review text: 81-08 The unknown shape f(x) of a family of the symmetrically increasing one-dimensional potentials V(x) = v f(x) ¿ 0 with couplings v ¿ 0 is shown obtainable from the given ground-state-energy formula E = F(v). The algorithm starts from a suitable few-parametric fit g(x) of the unknown shape giving the trial-and-error guess E = G(v) for the energy at all the couplings v. One further proceeds via a systematic linear-extrapolation improvement of g(x) constructed in a way which preserves a "maximal smoothness" of the tail of the related wave functions. The triple numerical test illustrates the merits and efficiency of the algorithm. Its thorough discussion is added.