

This is a review text file submitted electronically to MR.

**Reviewer:** Znojil, Miloslav

**Reviewer number:**

**Address:**

NPI AS CR  
250 68 Rez  
Czech Republic  
znojil@ujf.cas.cz

**Author:** Hernandez, E.; Jauregui, A.; Mondragon, A.

**Short title:** Non-Hermitian degeneracy of two unbounded states.

**MR Number:** 2252702

**Primary classification:** 81U05

**Secondary classification(s):** 34M60

**Review text:**

Quantum Mechanics in one-dimensional space enables us to understand resonances via ordinary differential Schroedinger equation containing a suitable model potential  $V(r)$ . Authors choose a specific two-parametric piecewise-constant double-barrier  $V(r)$  supporting two unbound states with equal energies and half-lives. Numerically they construct the complex energy surfaces in the vicinity of the exceptional point of degeneracy. A change of variables enables them to clarify the changes of identity of the poles of the S-matrix. The crossing and anticrossing of the two energies and of their widths becomes clearly visualized in this manner.