

ON THE NUMBER OF ISOLATED EIGENVALUES OF A PAIR OF PARTICLES ON THE HALF-LINE

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Abstract. In this note we consider a pair of particles moving on the half-line \mathbb{R}_+ with the pairing induced by a hard-wall potential. This model was first introduced in [12] and later applied to investigate condensation of electron pairs in a quantum wire [11, 10]. For this, a detailed spectral analysis proved necessary and as a part of this it was shown in [10] that, in a special case, the discrete spectrum of the Hamiltonian consists of a single eigenvalue only. It is the aim of this note to prove that this is generally the case.

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