

Level spacing distributions of 1-D potentials with non-integer powers

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Level spacing distributions of energy eigen values are investigated for the system $V(x)=(ax)^{2n/m}$. Analytic expressions for quantum eigen energies were derived with approximate asymptotic energy expansion method. The energy level spacings DE were obtained by expanding quantum action variable in a power series of DE .It was found that unlike in multidimensional systems energy level spacing distributions of the above system cannot be divided into Poisson and Wigner distributions according to the classical behavior of the system.. The level spacings of the above potentials are found to be distributed according to the power law.