

Turkish Journal of Physics

Turkish Journal

Behavior of transition amplitude and evolution of the energy of quantum kicked rotator


of

Abdolrasoul GHARAATI

Department of Physics, Payam Noor University, Shiraz-IRAN

e-mail: agharaati@pnu.ac.ir

Physics

 [Keywords](#)
 [Authors](#)

Abstract: I give certain analytical properties of quantum kicked rotators, both theoretic and observed from computation. I give an expression for the wave function between two successive impulses. An element of the transition matrix, the matrix that takes the wave function from one impulse to another, exponentially falls away from the main diagonal. The decay parameter is given for a few special cases of a periodic potential. Finally, the transition matrix is used to derive the time evolution of the energy for periodic cases and for fundamental resonances. The empirical expressions of Dorizzi et al. are compatible with our analytical results.



Key Words: Quantum chaos, quantum kicked rotator

phys@tubitak.gov.tr

Turk. J. Phys., **33**, (2009), 235-242.

Full text: [pdf](#)

[Scientific Journals Home](#)
[Page](#)

Other articles published in the same issue: [Turk. J. Phys.,vol.33,iss.4.](#)