

BIR ZARRACHALI SHREDINGER OPERATORI XOS QIYMATI UCHUN ASSIMPTOTIK FORMULALAR

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ANNOTATSIYA

Ushbu ishda bir o'lchamli panjarada tashqi maydon ta'siri bilan kontakt ta'sirlashuvchi bir kvant zarracha harakatini tavsiflovchi bir zarrachali gamiltonianga mos bir zarrachali diskret Shredinger operatori h_μ ning zarrachalar ta'sirlashuv energiyasi $\mu > 0$ ga bog'liq chapda yoki o'ngda yagona xos qiymatga ega ekanligi isbotlangan.

Ushbu xos qiymat $z(\mu)$, $\mu > 1$ ning aniq ko'rinishi topilgan. O'zaro ta'sir parametri $\mu > 1$ ga monoton va uzluksiz bog'liqligi ko'rsatilib, moduli yetarlicha kichik $\mu > 1$ larda ushbu xos qiymatlar uchun yaqinlashuvchi yoyilmalar olingan.

Kalit so'zlar: *panjara, operator, xos qiymat, spektr, muhim spektr, yoyilma.*

ASYMPTOTIC FORMULAS FOR EIGENVALUE OF ONE PARTICLE SCHRODINGER OPERATOR

ABSTRACT

In this study, one particle interaction energy of one particle discrete Schrödinger operator h_μ corresponding to a quantum particle gamiltonian describing the motion of a quantum particle in contact with an external field effect in a one-dimensional grid depends on $\mu > 0$ left or right proved to have a eigenvalue.

This eigenvalue $z(\mu)$, $\mu > 1$ a clear view of was found. The monotonic and continuous dependence of the interaction parameter on $\mu > 1$ is shown, and approximate distributions are obtained for these eigenvalues at sufficiently small modulus $\mu > 1$.

Keywords: lattice, operator, eigenvalue, spectrum, essential spectrum