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Abstracts of Short Communications and Posters

Section:

11. Mathematical Physics

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Asymptotic solutions, wronskian data and adiabatic invariants

New definition of adiabatic invariant of system of ordinary differential equations by means of wronskian of exact and asymptotic solutions. We reprove well known result that fracture of energy to frequency is adiabatic invariant and we find adiabatic invariant of oscillator in external periodic field and for Dirak system. Our new formula for adiabatic invariant "feels" resonanses. These adiabatic invariants generalize energy and can be used for proving correctness of initial value problems similar to the theory of Leray for hyperbolic equations. Other application is classification of partial differential equations.