

ON THE PROCEDURE OF QUANTIZATION
IN CLASSICAL MECHANICS AND THE REALITY
OF BOHM'S Ψ -FIELD

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S u m m a r y

On the basis of the Chetaev theorem on stable dynamical trajectories in the presence of dissipative forces, we obtain the generalized condition for stability of Hamilton systems in the form of the Schrödinger equation. It is shown that the energy of dissipative forces which generate the generalized condition of stability by Chetaev exactly coincides with the Bohm “quantum potential”. In the frame of Bohm’s quantum mechanics supplemented by a generalized Chetaev theorem and on the basis of the principle of least action for dissipative forces, we show that the square of the amplitude of a wave function satisfying the Schrödinger equation is equivalent semantically and syntactically to the probability density function for the number of trajectories of a particle, relative to which the velocity and the position of the particle are not hidden parameters. The conditions for the correctness of the Bohm–Chetaev interpretation of quantum mechanics are discussed.