

Contribution Title: ON MEAN-FIELD ASYMPTOTIC OF SOLUTION OF
QUANTUM BBGKY HIERARCHY
Authors: V. O. Shtyk
Presenting author: Shtyk V. O.
Affiliation: Institute for Theoretical Physics of Nas of Ukraine
E-mail: vshtyk@bitp.kiev.ua
Invited speaker:
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We investigate the mean-field asymptotic of a solution of the initial-value problem of the BBGKY hierarchy of quantum many-particle systems. The solution is constructed as an expansion over particle clusters whose evolution are governed by the corresponding-order cumulant (semi-invariant) of the evolution operators of finitely many particles. We prove that in the mean-field limit the constructed solution converges to the sequence of marginal operators satisfying the corresponding limiting initial-value problem of the quantum Vlasov hierarchy in the sense of the norm convergence of the space of sequences of trace class operators. The solution of the initial-value problem of the limiting hierarchy is possessed of the chaos property which make it possible to substantiate the derivation of the suitable nonlinear kinetic equation - quantum Vlasov equation and as the consequence - the nonlinear Schrödinger equation.