Pair Correlation Function for Weakly Non-Ideal Plasma
with Polarization and Exchange Interaction

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In order to describe the quantum non-ideal plasma on should take into account not only non-markovianity but exchange interaction too. Starting from the quantum BBGKY-hierarchy for the distribution functions, we have solved, the equation for the quantum pair correlation function considering the non-Markovian correction and exchange contribution. Solution of this equation can be expressed in terms of the Green's function of the linearized Hartree - Fock equation. As a result, we obtain a quantum non - Markovian kinetic equation describing the dynamical screening of the interaction potential and exchange interaction in a non trivial way. In particular, this equation contains the dielectric function of plasma which exactly takes into account exchange scattering in a plasma.