

**Kinetic coefficients in dense media**

A. N. Starostin,<sup>1</sup> A. V. Eletsii,<sup>2</sup>

<sup>1</sup> *Troitsk Institute for Innovation and Fusion Research, Troitsk, Moscow region 142190,  
Russia*

<sup>2</sup> *Russian Research Centre Kurchatov Institute, Moscow 123182, Russia*

*A.Starostin@relcom.ru*

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Equilibrium rate constants of inelastic processes in dense media have been studied with taking account the quantum corrections to the particle momentum distribution function (PMDF). The main problem in evaluation of the rate constants of inelastic processes as well as PMDF relates to finding the scattering amplitude out of the energy shell. This problem is resolved within the frame of the approach developed based on the asymptotic representation of the wave function of scattering particles. The explicit solution has been obtained for the problem of vibrational relaxation of diatomic molecules. The specific calculations performed for low temperature atmospheric pressure relaxation.