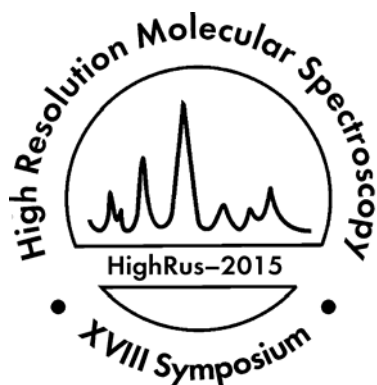




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Combined effect of small- and large-angle scattering collisions on a spectral line shape**Victor P. Kochanov**

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Algebraic approximations for line profiles calculated on the basis of quantum-mechanical collision integral kernels for dipole-dipole, dipole-quadrupole, and quadrupole-quadrupole intermolecular interaction potentials were obtained. In derivation of the profiles velocity-changing collisions of molecules with scattering on small and large angles also with the speed-dependence of collision relaxation constants have been taken into account following the detailed scheme of calculations presented in Ref. [1]. It was shown on the basis of numerical calculations that the relative contribution of small-angle collisions into the frequency of elastic velocity-changing collisions is more pronounced for the long-range dipole-dipole and dipole-quadrupole potentials. A sensitive criterion for analysis of a line narrowing was proposed and tested.

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