Abstract

Within the dynamic screening potential model, elastic scattering processes between electrons and atoms in partially ionized plasmas were investigated using the method of phase functions. The phase shifts were calculated by solving the Calogero equation. Differential and total cross sections for the scattering of electrons on noble gas atoms were calculated and compared with experimental and other theoretical data. It was shown that the polarization potential is adequate for description the interaction between charged and neutral particles in partially ionized plasma. Analysis of the results showed that the phase shifts of electron atom scattering obtained with taking into account the dynamic screening are larger than the data obtained with consideration of static screening. The results can be used to calculate the various transport coefficients of the semiclassical dense plasma.