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Dynamic shielding effect on the polarization momentum transport collision in strongly coupled semiclassical plasmas YOUNG-DAE JUNG, Hanyang University, Ansan — The influence of the quantum dynamic shielding on the polarization momentum transport collision is investigated in strongly coupled semiclassical plasmas. The electron-atom polarization momentum transport cross section is obtained by the Faxen-Holtzmark theory as a function of the collision energy, de Broglie wavelength, Debye length, thermal energy, and atomic quantum states. It is found that the dynamic shielding effect enhances the scattering phase shift as well as the polarization momentum transport cross section. The variation of quantum effect on the momentum transport collision due to the change of thermal energy and de Broglie wavelength is also discussed.

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