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Temperature Anisotropy in Magnetized Fusion Plasma

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In the present work, the electronic distribution function for high magnetized hot plasma, taking into account the electron ion collisions, is explicitly calculated. The basic equation in this investigation is the Fokker-Planck equation where some justified approximations for fusion and astrophysical magnetized plasmas are used. By computing the second moment of the distribution function, we have expressed the electrons temperatures in the parallel direction and in the perpendicular plane to the magnetic field. It has been shown that this temperature is anisotropic and this anisotropy is due to competition between magnetic field effect and collisions effect.

Keywords: magnetized plasma, kinetic theory, anisotropic temperature, collisions.

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