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NOMENCLATURE

v_i & v_{pi} be the velocity of fluid particles and dust particles respectively, ϵ_{ijk} be the Levi-Civita symbol, Ω_i be the angular velocity, x_i be the displacement variable, p be the pressure, τ_{ij} be the viscous stress tensor, J_i be the current density, B_i be the magnetic induction vector, N the number of dust particle per unit volume, $K=6\pi\mu a$ (a = radius of dust particle) be the Stokes constant, ϕ the volume fraction, m_p be the average mass of dust particles, ω_e the electron frequency, τ_e electron collision time, n_e the number density of electron, p_e be the electron pressure, σ be the electrical conductivity of the fluid and E_i be the electric field, μ be the dynamic viscosity, λ_1 be the ratio of relaxation time to the retardation time and λ_2 be the retardation time, z be displacement variable, u, v velocities of fluid particles of primary and secondary motion, u_p, v_p velocities of dust particles of primary and secondary motions, t time, ω frequency of oscillations, Ω dimensionless angular velocity, M magnetic parameter, Ω_0 component of angular velocity along z -axis, m Hall current parameter, G dimensionless relaxation time of dust particles, J Jeffrey parameter, R mass concentration of dust particles.