This is a very basic case repeating a simple PIC run we did before. Ions are assumed to form a uniform background. What we did before was to set a large ion mass with zero ion temperature and a uniform density chosen such that the whole simulation box is charge neutral. I have converted my output into dimensionless units for PSC, assuming I got the conversion rules correctly. My understanding is for PSC we can set units as: spatial d_e, time $1/\omega_{pe}$ such that $c = d_e\omega_{pe} = 1$, velocity c, density n_0, charge e (electron charge magnitude), mass m_e, temperature m_ec^2 (not exactly sure about this), electric field en_0d_e/ε_0, magnetic field $en_0d_e/c\varepsilon_0$. The periodic simulation box for this case is (-0.015, 0.015) in both the y and z dimensions. The grid we used before was 160x160 but can be set to other reasonable numbers. The initial magnetic field has only the out-of-plane component $B_x = 1$. Other initial conditions are listed in the file case1-input.txt. The first column is $\rho = (y^2 + z^2)^{1/2}$. Other columns are functions of ρ: electron density n_e, electron flow velocity in ϕ-component only v_ϕ, electron temperature T_e, and electric field in the ρ-component only E_ρ. These probably need to be input from the data file and can be called as interpolated functions of ρ. For the initial flow velocity and electric field, decomposition into y and z components can be done using $p_x = v_x = -yv_\phi/\rho$, $p_y = v_y = xv_\phi/\rho$, $E_x = xE_\rho/\rho$, $E_y = yE_\rho/\rho$. Of course one needs to be careful about the point $\rho = 0$, where $v_x = v_y = E_x = E_y = 0$. I think this is all the information we need for the input file.