Figure A1

Altitude profile of steady-state parallel potentials above the ionosphere. This potential profile is sustained by the temperature anisotropies shown in Figure A2.
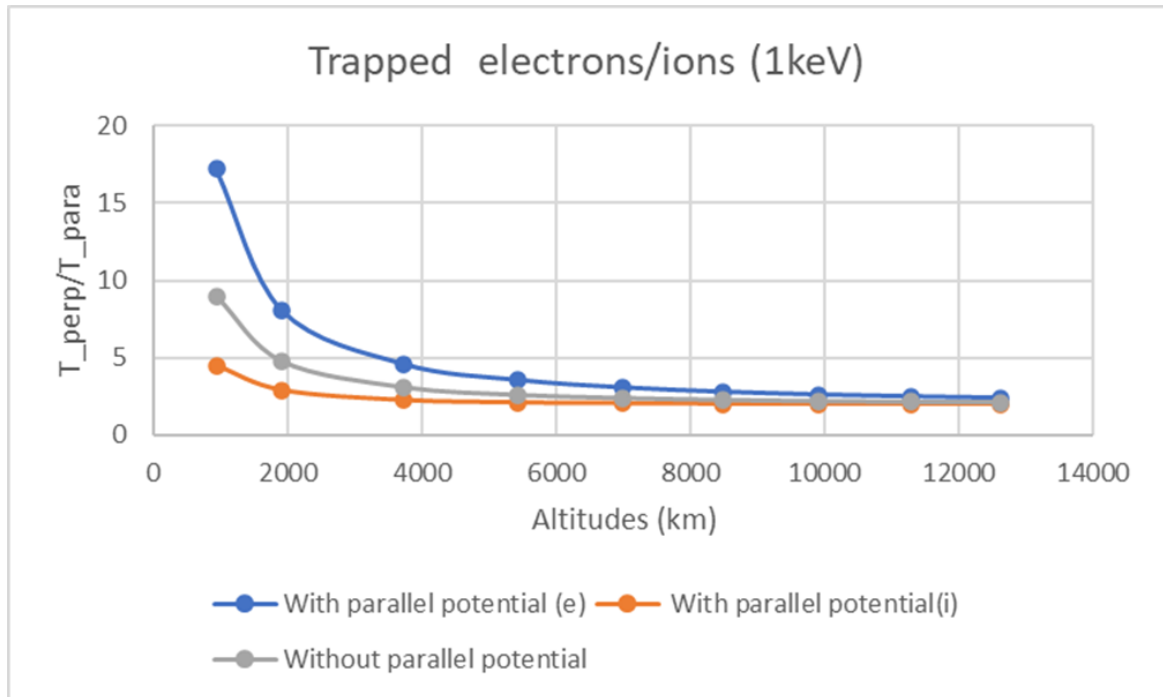
Figure A2

Altitude profiles of temperature anisotropy (T_perp/T_para) of electrons and ions trapped in the mirror geometry, with parallel potentials (blue for electrons and orange for ions) and with no parallel potentials (gray). A case of upward electric fields is presented. For electrons, more kinetic energies are distributed to the perpendicular direction (perpendicular temperature anisotropy). Wile for ions, more kinetic energies are distributed to the parallel direction (parallel temperature anisotropy). Temperature of the trapped particles is 1 keV.
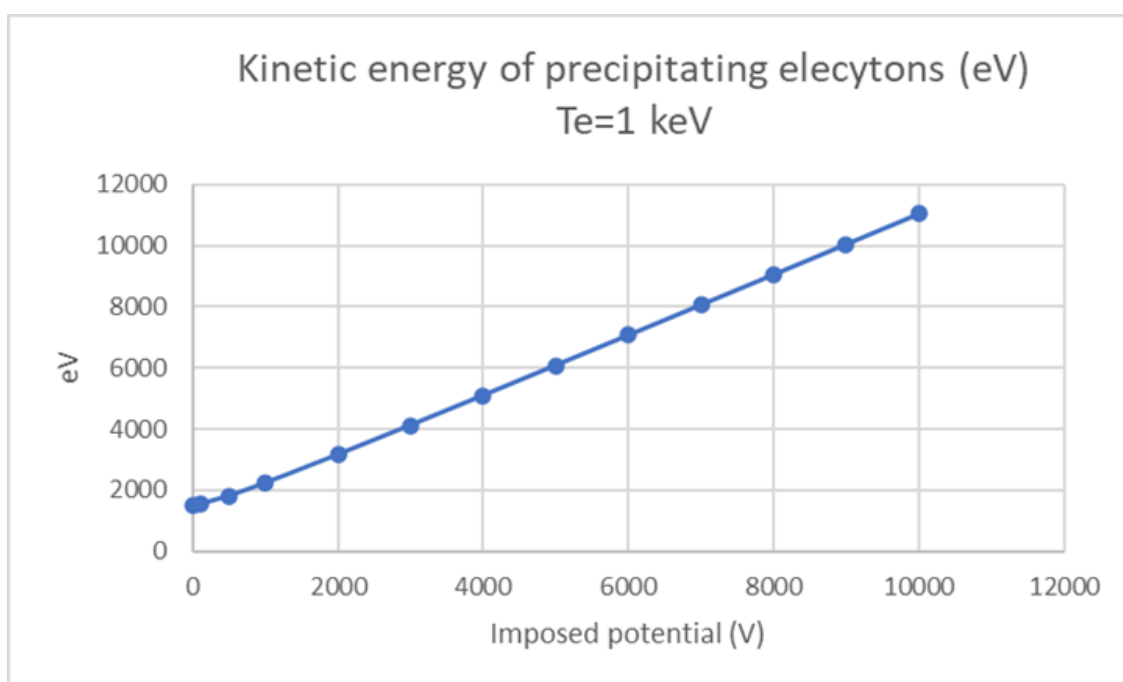
Figure A3

Energization of precipitating electrons by imposed parallel potential creating upward electric fields. Kinetic energies of precipitating electrons are approximated by the sum of imposed potential and 3/2*Te.