Figure A

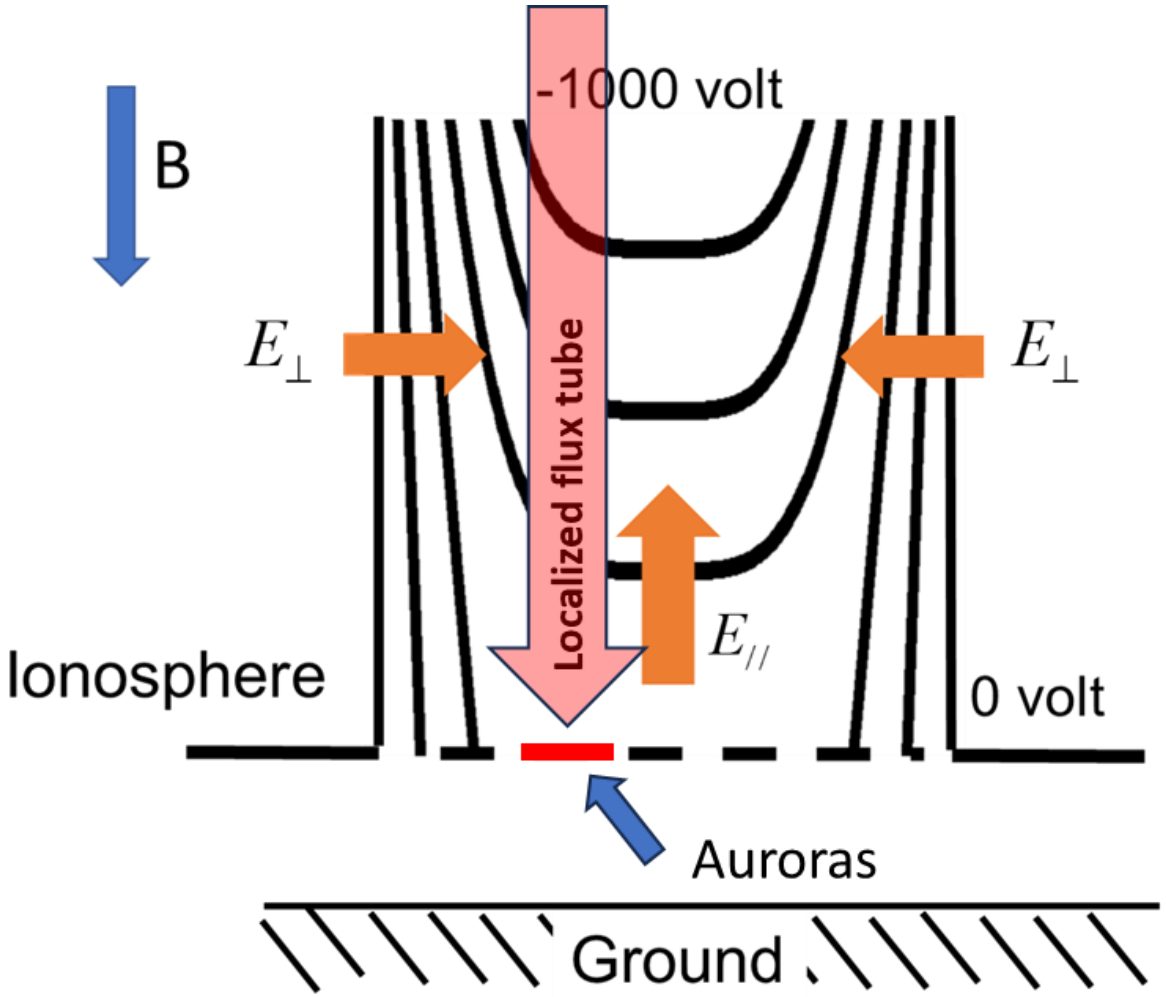
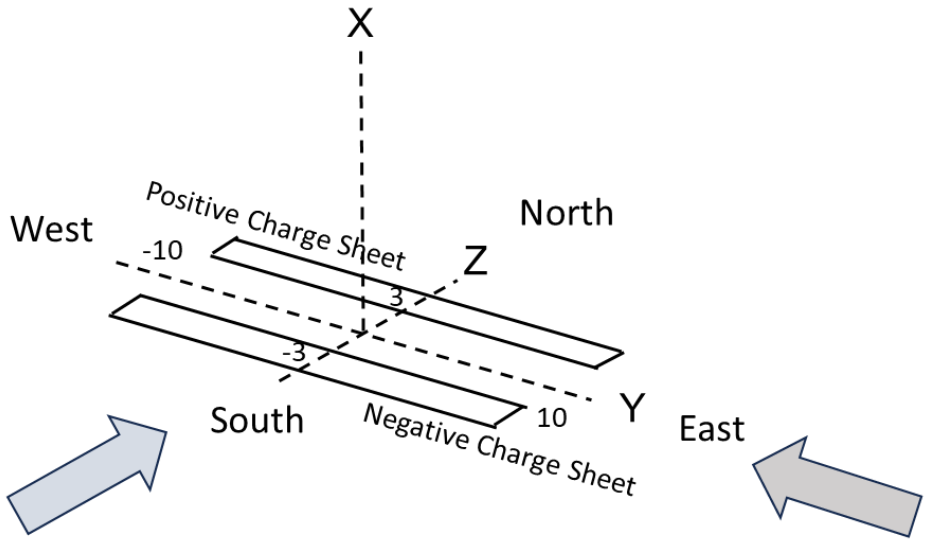
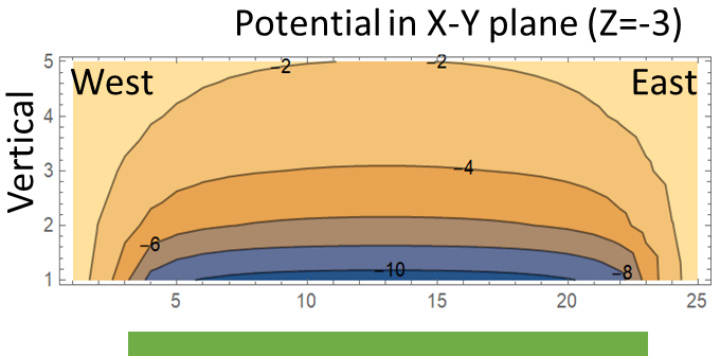

-1000 volt
B
$E_\perp$
$E_\perp$
Localized flux tube
$E_{//}$
Ionosphere
0 volt
Auroras
Ground

Figure B


X
West
Positive Charge Sheet
North
-10
Z
3
-3
Y
10
South
Negative Charge Sheet
East


Potential in X-Y plane (Z=-3)
West
East
Vertical
-2
-2
-4
-6
-10
-8
5
10
15
20
25
1
2
3
4
5

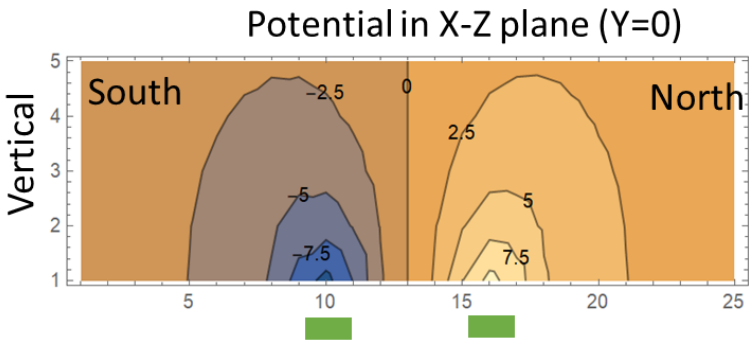

Potential in X-Z plane (Y=0)
South
North
Vertical
-2.5
0
2.5
-5
5
-7.5
7.5
5
10
15
20
25
1
2
3
4
5

Figure C

● : average space charge of electrons

O : average space charge of ions

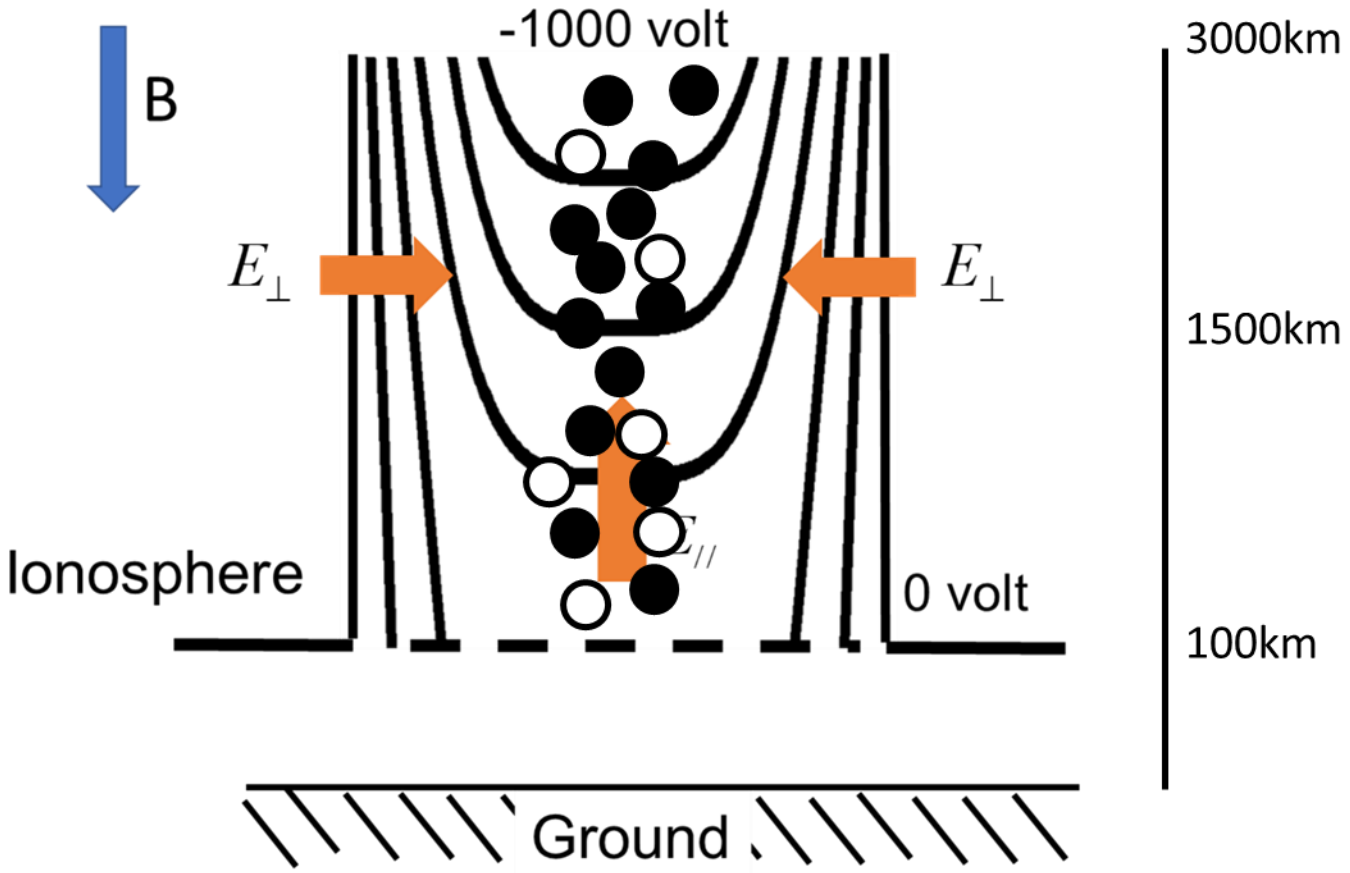
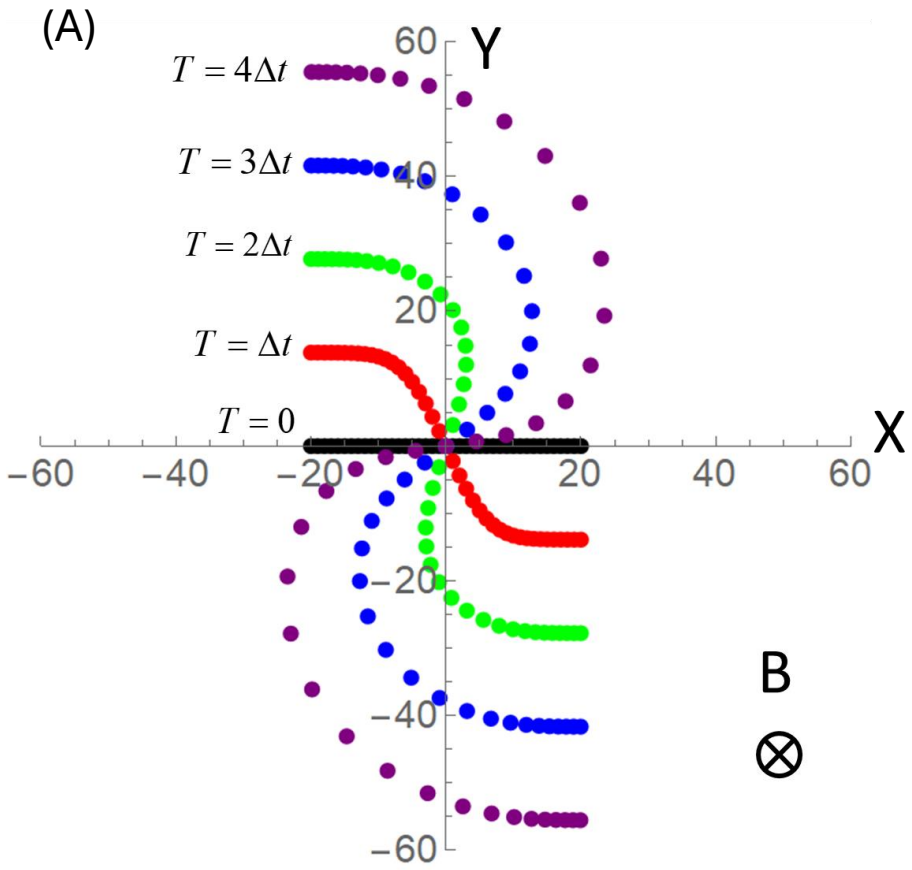
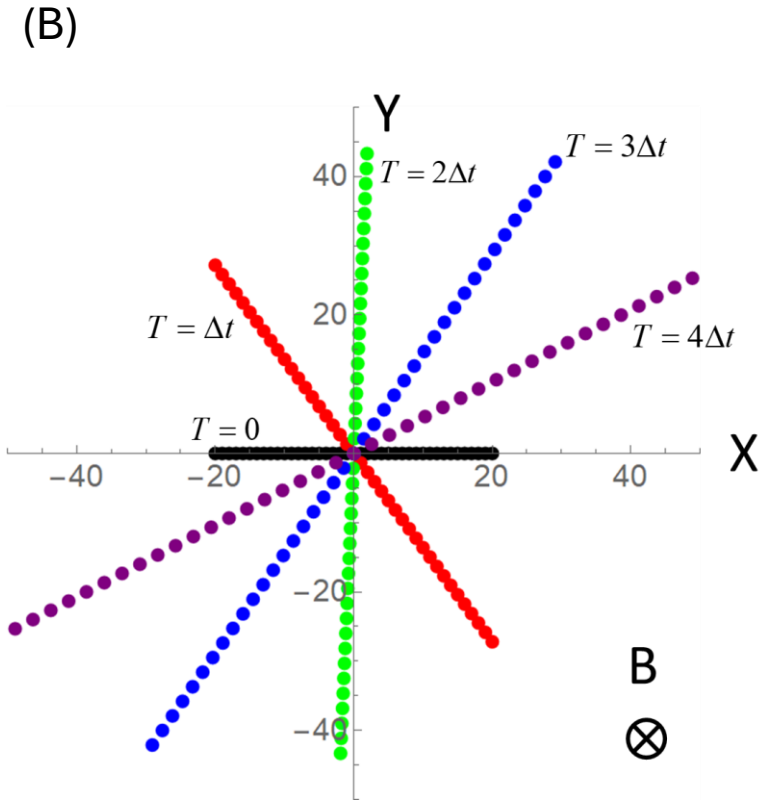


Figure D


(A)
Y
X
$T = 4\Delta t$
$T = 3\Delta t$
$T = 2\Delta t$
$T = \Delta t$
$T = 0$
60
40
20
−20
−40
−60
−60
−40
−20
20
40
60
B
⊗


(B)
Y
X
$T = 3\Delta t$
$T = 2\Delta t$
$T = \Delta t$
$T = 4\Delta t$
$T = 0$
40
20
−20
−40
−40
−20
20
40
B
⊗