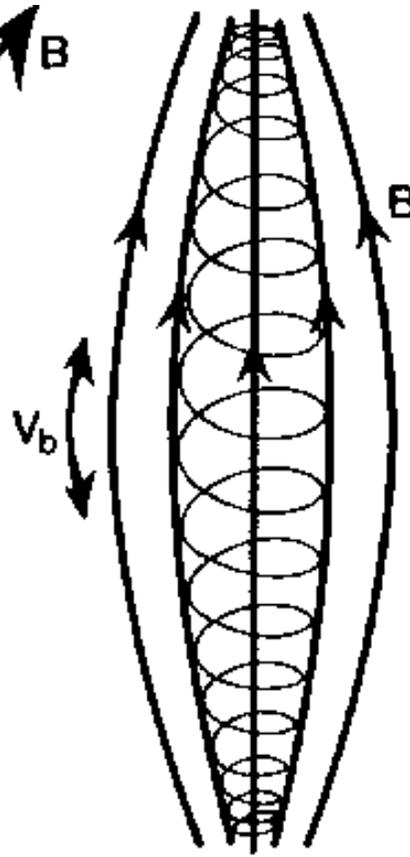
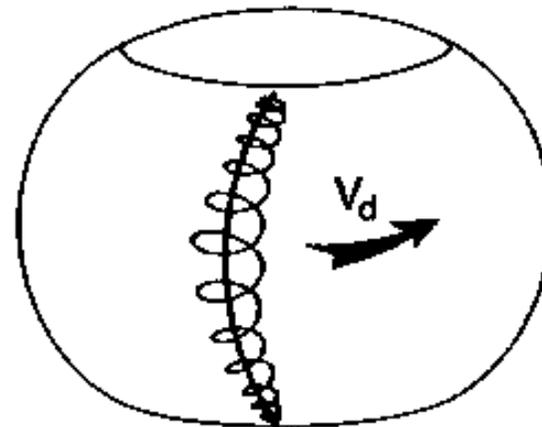


Gyro Motion

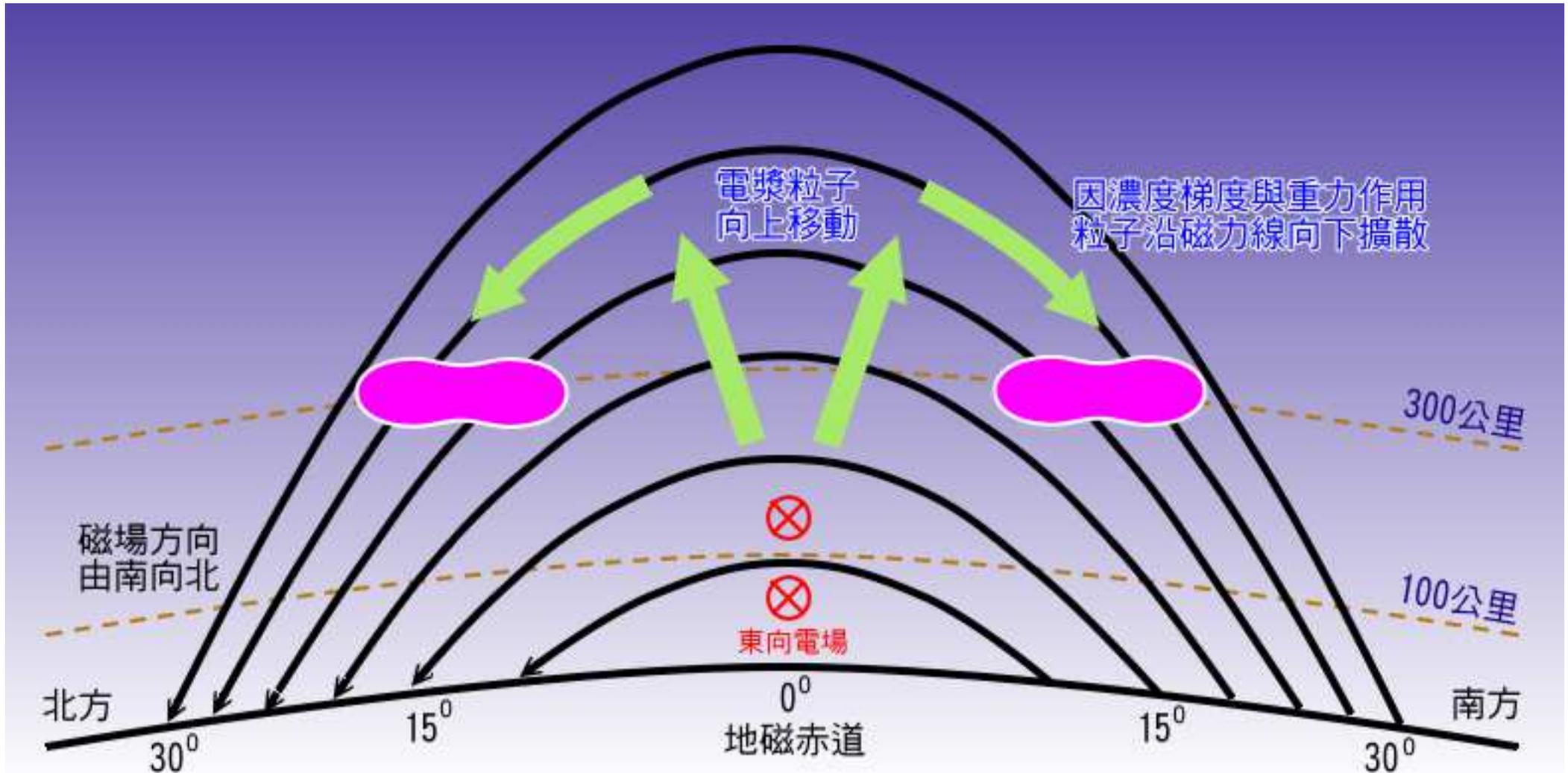


Bounce Motion



Drift Motion

赤道噴泉效應 (Equatorial Fountain Effect)



赤道噴泉效應 (Equatorial Fountain Effect)

由於有向東吹的中性風會產生一西向東的電場。當此電場沿著磁力線映射到地磁赤道上空的F層時，因地球磁場為北向，因此 $E \times B$ drift方向為垂直向上，會造成這區域的電漿向上舉升。帶電粒子抵達高層之後，因為電場減弱使得帶電粒子無法繼續向上運動進而堆積，接著受到重力與密度梯度力的作用，帶電粒子開始沿著磁力線運動到低緯度的電離層($\pm 10-15^\circ$)，由於軌跡很像噴泉，故被稱為“赤道噴泉效應”。

原本隨著緯度變化時，磁赤道地區的電子濃度應該會比兩側要高，但因為赤道噴泉效應，造成在磁赤道兩側約10-15度的電離層電子濃度反而異常升高，科學家稱此為“赤道異常現象(Equatorial Ionization Anomaly, EIA)”，而濃度較高的地區則為稱為“赤道異常區”。

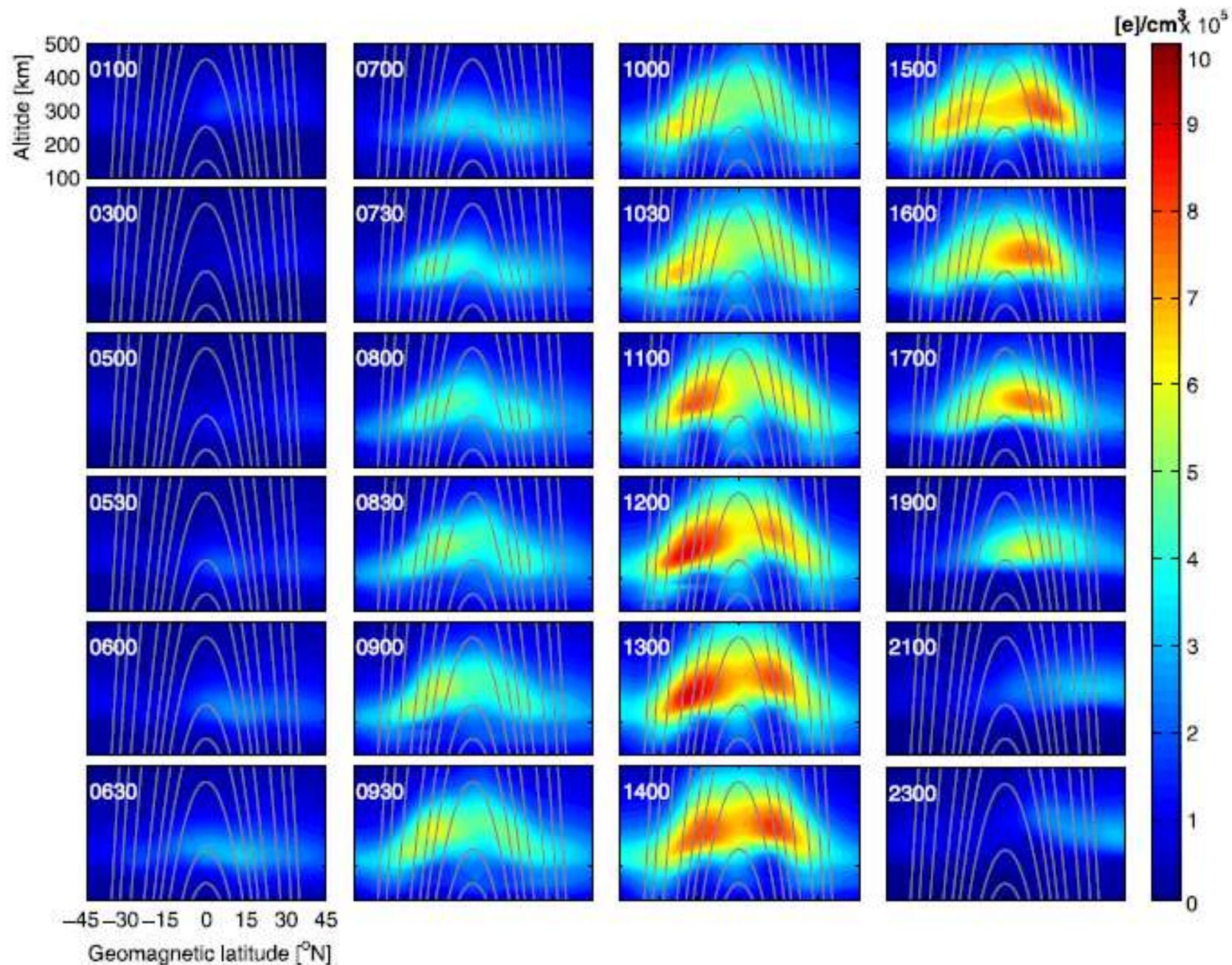


Figure 3. Time evolution of the ionospheric plasma density structure at the mid- and low-latitude regions at around 90°E (right) meridian sector ($\pm 15^{\circ}$ longitude intervals). The plasma density structure plot at each time interval is constructed by taking the median of the FORMOSAT-3/COSMIC observations within the two-hour interval during July–August, 2006. Time marked in each plot is the central hour of the two-hour interval.