A new model of the electron temperature in the topside iono-sphere ZAHRA PANAHI ESTARKHI[1], ALI BAKHSHAYESHI[2], Islamic Azad University of Mashhad — hra Panahi Estarkhi, Ali Bakhshayeshi Young Researchers and Elite club, Mashhad Branch, Islamic Azad University, Mashhad, Iran Department of physics, Mashhad Branch, Islamic Azad University, Mashhad, Iran. By using empirical models of electron density in the ionosphere, height equations as a function of electron density from α-Chapman, Epstein and exponential functions have been achieved. Plotting the achieved height equations, the one derived from Epstein function has been known as the best fit for height. Locating height derived from Epstein function in an empirical function for electron temperature, a new empirical model for electron temperature as a function of electron density has been achieved and applied to obtain directly the electron temperature for every electron density in the topside ionosphere. Latitudinal and seasonal variations for Te have been plotted in the heights above hmF2 to 1000km to compare the new Te model with the previous empirical model and the measured data from the ISIS database. The results are compared and the possible reasons for difference and similarities are also discussed.

[1]Phd student
[2]physics teacher at Islamic Azad University of Mashhad

Zahra Panahi Estarkhi
Islamic Azad University of Mashhad

Date submitted: 22 Dec 2015   Electronic form version 1.4