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COMPARATIVE PLANETOLOGY OF MARTIAN IONOSPHERE

Noora A Alameri[1], Muhammad M Shaikh[1] and **Ilias M Fernini[2]**
[1]Sharjah Center for Astronomy and Space Sciences, UAE
[2]Department of Applied Physics and Astronomy, University of Sharjah, UAE

The Martian ionosphere has been a substantial subject of research over the last 40 years, especially with the framework of our knowledge of planetary atmospheres and ionospheres. However, by utilizing Radio occultation (RO) measurements that can span and provide a full vertical profile of the ionosphere on Mars, a comprehensive comparative study of Martian ionosphere can be constructed. In this work, author will present the study of electron density profiles retrieved from several Radio occultation experiments, which has been conducted using data from Mars Global Surveyor (MGS), Mars Express (MEXs) and MAVEN ROSE. Total Electron Content (TEC) has been calculated numerically as well as the slab thickness for each profile. All the data has been analyzed under different circumstances of latitude, altitude, time of observation and Martian seasons to compare these results with the Earth's ionosphere. The preliminary results showed scale height changes due to the density variations marked by TEC dissimilarity and these differences in scale height quantification are expected to be related to the temperature divergence.

Note: