Abstract Submitted
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On the development of a new model of low-latitude ionospheric electric fields[1] SAM SHIDLER, FABIANO RODRIGUES, Univ of Texas, Dallas — Electric fields play an important role in ionospheric dynamics as they drive the transport of ionospheric plasma at F-region heights. Measurements of ionospheric electric fields at a fixed location have been made by ground-based radar systems. Global observations of ionospheric electric fields have also been made by sensors on LEO satellites. We have been working towards the development of a two-dimensional numerical model of the ionospheric electric potential at low latitudes. The model will be used to aid our interpretation of electric fields measurements including those to be made by the upcoming COSMIC-2 and ICON satellite missions. The set of two-dimensional equations used to generate the numerical model are obtained by taking into consideration the high conductivity along magnetic field lines. During this talk, we will present and discuss the mathematical foundation of the model and provide a description of the necessary input parameters. Initial results of our calculation of model components will be presented using, as drivers, readily available models of the ionosphere (IRI16), and thermosphere (HWM14, NRLMSISE00). The results will be discussed and potential future efforts will be described.

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