

## **ANOMALOUS CONDUCTIVITY EFFECTS ON THE E-REGION ELECTRIC FIELDS AT DIP EQUATOR**

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Zonal and vertical electric fields were estimated at E-region heights in the Brazilian sector. The technique for obtaining the vertical electric field is based on its proportionality to the Doppler velocities of plasma irregularities type II as detected by coherent radar. Zonal electric fields are obtained from the vertical electric fields based on their relation through the Pedersen and the Hall ionospheric conductivities. The 50 MHz backscatter coherent (RESCO) radar was used to estimate the Doppler velocities of the irregularities type II at four different range heights in the E-region. A magnetic field-aligned-integrated conductivity model was developed for proving the conductivities. It considers a multi-species ionosphere and a multi-species neutral atmosphere, and uses the IRI 2007, the MISIS 2000 and the IGRF 10 models as input parameters for ionosphere, neutral atmosphere and Earth magnetic field, respectively. The ion-neutron collision frequencies of all the species are combined through the momentum transfer collision frequency equation, and different percentages of electron-neutron were artificially included for studying the implication of such increase in the zonal electric field, which normally ranged from 0.13 to 0.49 mV/m between the 8 and 18 h (LT) in the Brazilian sector.

Electric Fields, Anomalous Conductivity, Equatorial Electrojet

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