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## CLIMATOLOGY OF THE BRAZILIAN EQUATORIAL IONOSPHERE DURING THE SOLAR MINIMA OF 1996 AND 2009

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The behavior of the Brazilian equatorial ionosphere during the solar minimum periods that cover the solar cycles 22/23 (1996) and 23/24 (2009) is investigated here. The F2 layer critical frequency (foF2) and the peak height F2 layer (hmF2) collected from the Digisonde operated at São Luis (2.33° S; 44° W, dip in 2009: -5.7) are carefully analyzed and the main differences between these parameters during both periods are discussed. Additionally, a comparison between the observational data and their prediction by the IRI model is also performed. Preliminary results indicate that the mean values of foF2 and hmF2 in the equinoxes and June Solstice during the deep solar minimum of 2009 were lower than those in 1996, the differences being more pronounced in the peak height parameter. Anomalous responses to solar variability were observed in the December solstice when the hmF2 in 2009 was considerably higher than in 1996 during a specific interval of daytime. Besides that, the pre-reversal enhancement of the zonal electric field during this period was registered at about 30 minutes before that in 1996. Regarding the comparisons between the observational and modeled data, great discrepancies were noted mainly in hmF2 during some intervals, in both years and seasons. The results also highlight the differences observed near to sunrise, when the IRI model overestimates the hmF2 values more sharply in the winter and equinoxes of 2009 and underestimate in the summer

solstice during a long period of the day.