



Improving maps for the peak of the F2 layer

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The most common set of maps for ionospheric properties (e.g., the critical frequencies and the F2 layer transfer parameter $M(3000)F_2$) are the “CCIR maps” generated for the “Comité Consultatif des Radiocommunications” of the International Telecommunication Union (ITU) in the years 1962 and 1965. The users of the maps were found in the HF propagation community. The data base for these maps was provided by ground ionosondes and was necessarily incomplete. The mapping algorithm is rather complicated. On the basis of the “CCIR maps” we have produced improved maps for F2 peak height and F2 peak electron density, primarily for the use in electron density models for transionospheric propagation of radio waves. Further map improvements need improvements of the data base. Ionosondes (ground based and topside sounders) are certainly important sources for data base improvements but we will have to use satellite to ground and satellite to satellite electron content to fill the gaps in space and in time. We discuss the possibilities to derive F2 peak data from electron contents making use of modern evaluation methods.