

中国地区电离层 f_oF_2 重构方法及其在短期预报中的应用

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摘要 提出了一种适合于中国地区电离层 f_oF_2 的重构方法——以中国参考电离层为背景的改进克里格法. 该方法把 f_oF_2 的估计值与中国参考电离层模型值之差值的相对值作为区域化变量, 引入电离层距离, 采用克里格法实现区域电离层重构. 与直接利用 f_oF_2 进行克里格重构相比, 以中国参考电离层为背景场保持了电离层的区域特征, 提高了重构的准确性和稳定性. 利用我国电离层垂测台站网的数据对该方法应用于中国地区的重构精度进行了评估. 该方法与单站预报的自相关分析法相结合可实现中国地区电离层 f_oF_2 短期预报.

关键词 [电离层重构](#), [电离层预报](#), [克里格法](#), [中国参考电离层](#)

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Ionospheric f_oF_2 reconstruction and its application to the short term forecasting in China region

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Abstract The CRI based Kriging method has been proposed for reconstruction of ionospheric f_oF_2 in China region. In this method the regional variate is adopted as the relative difference between the estimated and the CRI modeled values of f_oF_2 . Introducing the ionospheric distance the regional ionospheric reconstruction can be realized by using the Kriging method. The CRI based Kriging method would improve the accuracy and stability in the regional ionospheric reconstruction as compared with the straight f_oF_2 reconstruction. Based on the systematic measurements of the Chinese Ionosonde Network computer simulations of the ionospheric reconstruction have been done for different solar activity years, months and hours, which give the estimates of the reconstruction accuracy in China region. This method, combined with the autocorrelation method for single station, will practise the short term forecasting of f_oF_2 in China region.

Key words [Ionospheric reconstruction](#) [Ionospheric forecasting](#) [Kriging method](#) [China reference ionosphere](#)

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