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Retrieval of Aerosol Optical Depth and Correlation Analysis of PM2.5 Based on GF-1 Wide Field of View Images

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Abstract : This paper proposes a method that can estimate PM2.5 by the images of GF-1 Satellite that called WFOV images (Wide Field of View). AOD (Aerosol Optical Depth) over land surfaces was retrieved in Shanghai area based on DDV (Dark Dense Vegetation) method. PM2.5 information, gathered from ground monitoring stations hourly, was fitted with AOD using different polynomial coefficients, and then the correlation coefficient between them was calculated. The results showed that, the GF-1 WFOV images can meet the requirement of retrieving AOD, and the correlation coefficient between the retrieved AOD and PM2.5 was high. If more detailed and comprehensive data is provided, the accuracy could be improved and the parameters can be more precise in the future.

Keywords : remote sensing retrieve, PM 2.5, GF-1, aerosol optical depth
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