

## 利用静止卫星窗区红外亮温反演晴空区风场的初步研究

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## A preliminary study on wind field in clear sky region based on infrared brightness temperature of geostationary satellite image

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**摘要** 云导风反演明显的局限是在晴空区无法获取风场。为克服这种局限, 提出利用静止卫星红外图像资料反演晴空区风场的方法—时间序列差值法, 利用LOWTRAN7对其进行可行性分析, 并应用云导风实验系统CWIS进行晴空区导风实验。结果表明: 实验结果与NCEP资料低空风场有很好的一致性。因此, 在传统的“云导风”基础上, 增加晴空区卫星导风, 可为卫星遥感资料在台风、梅雨和强对流等天气系统分析预报中的定量应用提供更多的卫星风矢。

**关键词:** [静止卫星红外图像](#) [晴空区导风](#) [时间序列差值法](#)

**Abstract:** The lacking wind field data in clear sky regions is the obvious limitation of deriving cloud motion wind. Inversion method of wind field under clear sky was brought forward based on infrared image of geostationary satellite in order to overcome the limitation. This method was called as temporal sequence difference method. The feasibility was analyzed by LOWTRAN7. Wind guide of clear sky regions was tested by cloud motion wind inferring system (CWIS) developed by Nanjing University of Information Science and Technology. The results indicate that the wind field based on wind guide of clear sky regions is consistent with that in lower level based on NCEP data. Motion wind deriving satellite of clear sky regions is added into remote sensing information besides traditional cloud motion wind, which could provide more satellite wind vectors data for weather forecast, especially for typhoon, Meiyu rain and strong convection weather etc..

**Keywords:**

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