

研究报告

西双版纳热带季节雨林风时空变化特征初步分析

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收稿日期 2004-5-25 修回日期 2004-10-28 网络版发布日期 接受日期

摘要

利用西双版纳热带季节雨林观测铁塔不同高度的风速及风向观测资料, 分析了风的年、季节和日变化特征. 结果表明, 林冠上风速较强, 林冠下风速较弱; 林内风速的日变化和垂直变化均不明显. 30~50 m 范围内, 风速垂直变化最显著, 但年变化不大; 50 m 以上风速年变化显著, 但垂直变化稍小. 干热季(3~4月)风速最大, 雨季(5~10月)次之, 雾凉季(11~翌年2月)最小. 昼间风速大于夜间. 在昼间, 上午风速最小, 下午次之, 中午最大. 受地理位置和地形影响, 风向具有明显的日变化特征, 主导风向昼间为偏东南风, 夜间为偏西风. 昼间零平面位移(d)值上午最大, 中午次之, 下午最小, 其年变化幅度呈现下午幅度大, 上午和中午幅度小的趋势. 粗糙度(Z_0)昼间值呈现下午>中午>上午的趋势, 且下午 Z_0 值显著大于其他两个时段.

关键词 [热带季节雨林](#) [风速](#) [风向](#) [时空变化](#) [零平面位移](#) [粗糙度](#)

分类号

Temporal-spatial characteristics of wind in tropical seasonal rainforest in Xishuangbanna of Yunnan Province

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Abstract

Based on the observation data of wind speed and wind direction at different heights on the observation tower (70 m) in the tropical seasonal rainforest of Xishuangbanna, this paper analyzed the annual, seasonal and diurnal characteristics of wind. The results showed that the wind speed above crown canopy was stronger than that under canopy, and the diurnal and vertical change under the canopy was not obvious. From the height of 30 m to 50 m, the vertical change of wind speed was most remarkable, but its annual change was not obvious. Above 50 m, the change trend was opposite. Dry-hot season (March-April) had the strongest wind speed, followed by rainy season (May-October) and foggy-cool season (November -next February). The wind speed at daytime was stronger than that at nighttime. At daytime, wind speed was in order of morning>afternoon>noon. Wind direction had obvious diurnal characteristics, *i.e.*, leaning southeast wind at daytime and leaning west wind at nighttime. At daytime, the change trend of zero-plane displacement (d) was in order of morning>noon>afternoon, and the annual change range in the afternoon was wider and lower than that in the morning and at noon. The change trend of roughness length (Z_0) at daytime was opposite to that of d . The d value in the afternoon was obviously higher than that in the morning and at noon.

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Key words

[Tropical seasonal rainforest](#) [Wind speed](#) [Wind direction](#) [Temporal](#) [spatial characteristics](#) [Displacement height](#) [Rough degree](#)

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