

研究报告

## 长白山阔叶红松林降雨截留量的估算

王安志, 裴铁璠, 金昌杰, 关德新

中国科学院沈阳应用生态研究所, 沈阳 110016

收稿日期 2005-8-22 修回日期 2006-5-22 网络版发布日期 接受日期

**摘要** 林冠截留降雨过程是森林流域水分循环的重要组成部分, 以往的研究多为1次或多次降雨量与截留量的关系, 很少考虑雨强和树木特征. 文中利用林冠截留降雨半经验半理论模型, 以雨强和叶面积指数为模型输入, 林冠湿润程度为参数, 结合Penman-Monteith公式, 有效地模拟了长白山阔叶红松林次降雨的截留过程和2004年5~9月的林冠截留总量. 结果表明, 研究期间的林冠截留总量为39.96 mm, 占降雨总量的10.2%, 与实测资料吻合. 根据模拟结果, 探讨了不同时间尺度上截留量与降雨量之间的关系, 随着时间尺度的增大, 截留量与降雨量的相关关系趋于明显.

**关键词** [截留](#) [分配降雨](#) [模型](#) [雨强](#) [叶面积指数](#)

分类号

## Estimation of rainfall interception by broad leaved Korean pine forest in Changbai Mountains

WANG Anzhi, PEI Tiefan, JIN Changjie, GUAN Dexin

Institute of Applied Ecology, Chinese Academy of Sciences, Shenyang 110016, China

### Abstract

Rainfall interception by forest canopy is an important process of water resources cycle in forest watershed. Most studies focused on the relationships of the interception with the precipitation in one or more rainfall events, without considering rainfall density and vegetation characteristics. By using a semi-theoretical model of canopy rainfall interception model, taking rainfall intensity and leaf area indices as inputs and canopy wetness index as parameter, and combining with Penman-Monteith equation, this paper simulated the rainfall interception by the broad-leaved Korean pine forest canopy in Changbai Mountains, and estimated the total interception of rainfall events from 1 May to 30 September 2004. The results showed that the total interception was 39.96 mm, occupying 10.2% of the precipitation, and the estimated results agreed well with the measured ones. Based on the estimated results, the relationships between interception and rainfall on different temporal scales were analyzed, which suggested that with the increase of temporal scale from 30 min to a month, the correlation between interception and rainfall became more and more obvious.

**Key words** [Interception](#) [Rainfall distribution](#) [Model](#) [Rainfall density](#) [Leaf area index](#)

DOI:

通讯作者

### 扩展功能

#### 本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(1625KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [参考文献](#)

#### 服务与反馈

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [复制索引](#)
- ▶ [Email Alert](#)
- ▶ [文章反馈](#)
- ▶ [浏览反馈信息](#)

#### 相关信息

- ▶ [本刊中 包含“截留”的 相关文章](#)
- ▶ 本文作者相关文章

- [王安志](#)
- [裴铁璠](#)
- [金昌杰](#)
- [关德新](#)