

研究论文

2050年前中国雾日变化趋势的预估

刘赫男¹, 罗勇²

1. 黑龙江省气候中心
2. 国家气候中心

收稿日期 2008-12-22 修回日期 2009-3-30 网络版发布日期 2009-10-14 接受日期 2009-10-14

摘要 利用1971-2005年中国591个气象台站的雾日资料以及逐日最低气温、相对湿度、平均风速资料, 分析了35 a来中国各区域年雾日数与这些因子的相关关系, 并利用IPCC第四次评估报告所提供的模式数据资料, 针对3种不同的排放情景, 对21世纪上半叶各区域年平均雾日进行预估。结果表明: 对划分的9个雾区的年雾日数的回归方程的拟合效果较好, 可以用来进行预估; 未来50 a中国大部分地区雾日呈明显减少的变化趋势, 在A1B, A2和B1情景下, 雾日减少的平均幅度分别为16.2%, 13.4%和12.9%。未来50 a中国雾日预估结果的空间分布显示: 3种情景下未来中国大部分雾区雾日数都将减少, 个别地区雾日数有增加趋势, 其中A1B情景下雾日减少区的减少趋势最明显, 而B1情景下雾日增加区的增加趋势最明显。

Abstract Based on the daily observational data of fog, minimum temperature, relative humidity and mean wind speed at 591 national meteorological observation stations of China during the period of 1971-2005, the correlation between regional annual fog days and the three climate factors were analyzed for each of the nine fog regions of China. Furthermore, the annual fog days for each region in the first 50 years of the 21st century were projected by using the model output data under the SRES-A2, -A1B, and -B1 emission scenarios provided by IPCC AR4. Results show that the projection results of regression equations of annual fog days for 2001-2005 are so good that these equations can be used for long-term projection. The projected results indicate that fog days in the first half of the 21st century will overall and obviously decrease by 16.2%, 13.4% and 12.9% under the SERS-A1B, -A2, and -B1 emission scenarios, respectively. As far as the spatial distribution is concerned, fog days under the three scenarios will all decline in most areas of China except a few individual areas; the most obvious decline will occur in Yunnan-Guizhou Plateau, South China, North China and Sichuan Basin etc. under the SRES-A1B scenario, while the most obvious increase will occur in the Tianshan Mts. and the Longdong-Shanxi region in Northwest China under the SRES-B1 scenario.

关键词 [雾区](#) [回归分析](#) [预估](#) [排放情景](#) [趋势分析](#) [气候模式](#)

分类号

DOI:

通讯作者:

刘赫男 shajia23@hotmail.com

作者个人主页: 刘赫男¹; 罗勇²

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [PDF \(2672KB\)](#)
- ▶ [\[HTML全文\] \(0KB\)](#)
- ▶ [参考文献 \[PDF\]](#)
- ▶ [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](#)
- ▶ [引用本文](#)
- ▶ [Email Alert](#)

相关信息

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