

论文

## 石家庄不同等级降水日数的时空分布特征

韩军彩<sup>1,2</sup>,陈静<sup>1</sup>,岳艳霞<sup>1</sup>,高祺<sup>1,2</sup>

1.南京信息工程大学,江苏 南京 210044;2.石家庄市气象局,河北 石家庄050081

收稿日期 2009-8-3 修回日期 2009-9-4 网络版发布日期 2009-12-26 接受日期 2009-9-4

**摘要** 利用1972—2007年石家庄市17个观测站的逐日降水资料,采用线性趋势法和Mann-Kendall突变检验法,分析了近36 a石家庄市不同等级降水日数时空分布特征和变化规律。结果表明:石家庄市年总雨日数和不同等级降水日数均呈减少趋势,暴雨日数减少趋势最不明显;年总雨日数发生了突变,突变年份为1992年;20世纪90年代后,降水有向极端化发展的趋势。在空间分布上,石家庄市年总雨日数及不同等级降水日数自西北、东南向中部地区逐渐减少,西北部山区和东南部平原存在两个多雨日中心和多暴雨中心;各站年总雨日数和小雨日均呈显著减少趋势,北部、西北部和东南部地区减少趋势相对更显著,其它等级降水事件日数大多数观测站也呈减少趋势,但减少速率相对较小。

**关键词** [降水日数](#) [年际变化](#) [空间特征](#) [突变分析](#) [石家庄](#)

分类号 [P428.0<sup>+</sup>24](#)

## Temporal-spatial distributions of different levels precipitation days in Shijiazhuang, Hebei province

HAN Jun-cai<sup>1,2</sup>,CHEN Jing<sup>2</sup>,YUE Yan-xia<sup>1</sup>,GAO Qi<sup>1,2</sup>

1. Nanjing University of Information Science and Technology, Nanjing 210044,China; 2. Shijiazhuang Meteorological Bureau, Shijiazhuang 050081, China

**Abstract** Based on daily precipitation data from 1972 to 2007 in 17 weather stations of Shijiazhuang, the temporal and spatial distributions of different levels precipitation days were analyzed by linear trends method and Mann-Kendall mutation testing during the recent 36 years. The results show that the total precipitation days and different levels precipitation days decrease obviously, and the decreasing tendency of heavy rainstorm days is the weakest. An abrupt change of annual total precipitation days occurs in 1992, and precipitation evolves to extreme since 1990s. Annual total precipitation days and different levels precipitation days decrease from the northwest and the southeast to middle areas. There are rainy day center and rainstorm center in the northwest mountains areas and southeast plain. Annual total precipitation days and light rain days decrease obviously in each weather station, especially in the north, northwest and southeast areas. On the other hand, other levels precipitation days also decrease in most weather stations, while the speed of decrease is relative small.

**Key words** [Precipitation days](#) [Interannual variation](#) [Spatial distribution](#) [Abrupt change analysis](#) [Shijiazhuang](#)

DOI:

通讯作者

### 扩展功能

#### 本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(779KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [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“降水日数” 的相关文章](#)
- ▶ 本文作者相关文章

- [韩军彩](#)
- [陈静](#)
- [岳艳霞](#)
- [高祺](#)
-