论文

一次人工增雨作业中CA-FCM与其他评估方案的比较研究

房彬1,肖辉2,班显秀1,宫蔚蔚3

1.辽宁省人工影响天气办公室 辽宁沈阳110016；2.中国科学院大气物理研究所 北京100029；沈阳市气象局 辽宁沈阳110168

摘要　根据2002年4月5日河南省人工催化增雨作业数据,分别采用作业区域趋势对比双比分析评估方案、区域趋势相关回归评估方案、区域趋势协变量多元回归评估方案、FCM(浮动对比区历史回归)评估方案、以降水量为协变量的CA-FCM评估方案和以降水量与整层大气可降水量为协变量的CA-FCM评估方案进行效果评估。结果表明:协变量由降水量和整层大气降水量2个组成的CA-FCM方法,由于引入了不受催化影响的物理协变量作为控制因子,以及采用了聚类分析提高了对比区和影响区相关性,其评估效果最好,显著水平高于0.05;其他评估方法评估效果较差。

关键词　　CA-FCM　效果评估方案　聚类分析　统计检验　整层大气可降水量　人工增雨作业效果

分类号

Comparison between CA-FCM and other precipitation enhancement effect evaluation methods on cloud seeding operation

FANG Bin1 XIAO Hui2 BAN Xian-xiu1 GONG Wei-wei3

1.Liaoning Weather Modification Office;Shenyang 110016;China;2.Institute of Atmospheric Physics;Chinese Academy of Sciences;Beijing 100029;China;3.Shenyang Meteorological Bureau;Shenyang 110168;China

Abstract Based on cloud seeding data on April 5,2002 in Henan province,cloud seeding effects were evaluated by six methods,i.e.double contrast method of regional rainfall tendency control,regression analysis method of regional tendency correlation,multiple regression analysis method of regional tendency covariant,floating control historical regression method (FCM),cluster-analysis-based floating control historical regression method(CA-FCM) using rainfall as a covariant and CA-FCM using rainfall and atmospheric perceivable water as covariants.The results indicate that the effect of CA-FCM using rainfall and atmospheric perceivable water as covariants is better,for the physical covariant that is not influenced by catalyze is used as controlling factor and cluster analysis method is employed.The significant is more than 0.05.The effects of other methods are worse.

Key words 　CA-FCM　Effect evaluation method　Cluster analysis　Statistical test　Atmospheric perceivable water　Cloud seeding effect

DOI:

通讯作者

扩展功能

本文信息

- Supporting info
- PDF(520KB)
- [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 "CA-FCM"的相关文章

本文作者相关文章

- 房彬
- 肖辉
- 班显秀
- 宫蔚蔚