

农学—研究报告

粤东地区近52年日照时数的气候变化特征分析

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摘要:

摘要: 利用粤东地区13个气象站1957—2008年日照时数资料, 采用累积距平、Mann-Kendall、小波分析等方法, 分析粤东地区日照时数的气候变化趋势。结果表明, 就整个粤东地区平均而言, 日照时数在上世纪60年代最多, 本世纪初次之, 80年代最少; 日照时数变幅最大的季节为春季, 其次是冬季, 夏季和秋季不明显; 突变检验表明, 上世纪60-70年代日照时数出现了突发性的上升, 进入了一个相对日照时数偏多的气候态, 到80-90年代日照时数趋于减少, 但没有突变点出现; 据全年和季节日照时数振荡主周期判断, 在大的时间尺度上日照时数目前处于偏少期, 12-14a时间尺度上则为偏多期, 较小尺度上(2-4a)则均为偏少期; 对日照时数气候变化的空间分析表明, 局部地方与整个地区的气候变化趋势并不完全同步, 大部分地方是下降的, 个别地方则是上升的。

关键词: 日照时数; 气候变化; 累积距平分析; Mann-Kendall法; 小波分析

Characteristics of Sunshine Hours Change for 52 Years over Guangdong Province Eastern Area

Abstract:

Abstract: Based on the sunshine hours data of meteorological stations from 1957-2008, the characteristics of sunshine hours change in Guangdong Province Eastern Area had been studied with the methods of accumulative anomalies, Mann-kendall test,wavelet analysis.The result indicates that, in terms of the average of the whole area, the sunshine hours of 1960s was the most of the sunshine hours of 1957-2008,followed by the earlierof this century, 1980s was the least, and the greatest amplitude season was spring, followed by winter, summer and autumn were not obvious.Mutation test showed that the age 1960s-1970s sunshine hours increased rapidly, entered a high sunshine hours' climatology,and the sunshine hours decreased since 1980s. According to the main periods of annual and seasonal sunshine hours change, it will be mainly in the less period for the large time scale in the future, and in the 12-14a time scale, it will be mainly in the more period, and in the small time scale (2-4a), it will be mainly in the less period. Spatial distribution of the change rate showed that the trend was general but not universal, most of the area had decreased but a few had increased.

Keywords: sunshine hours climate change accumulative anomalies Mann-kendall test Wavelet analysis

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