

前植物生产层

基于GIS技术的青海省最低气温空间插值方法探讨

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摘要:

采用青海省50个气象站点30年气候整编资料,分别应用克里格(Kriging)插值法和统计分析软件建立最低气温与地形的多元线性回归模型、多维二次趋势面模型,对青海省无测站地区500 m × 500 m 栅格单元的1、4、7、10月最低气温值进行了推算,制作了青海省最低气温的栅格图,分析了不同插值方法对青海省最低气温的插值效果。结果表明:1、4、10月份,多元线性回归模型法和多维二次趋势面模型法要优于克里格插值法;而7月份应用克里格法插值效果较好。

关键词: 最低气温 多元线性回归 多维二次趋势面 克里格插值法

GIS technology based minimum temperature spatial interpolation method in Qinghai Province

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Abstract:

The multiple linear regression model and multiple linear regression model were established using Kriging interpolation method and Statistic Analysis Software based on the climate data in 30 years from 50 meteorological stations in Qinghai Province. Grid cell value with 500 m × 500 m of minimum temperature in January, April, July, October were calculated to produce a minimum temperature map of Qinghai Province. The effects of different interpolation methods were analyzed. Results showed that the multiple linear regression model and multi dimensional quadratic trend surface model were better than the Kriging interpolation method in January, April and October; and Kriging interpolation method was better in July.

Keywords: minimum temperature; multiple linear regression; multi dimensional quadratic trend surface; Kriging interpolation method

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