

中国降水年际和年代际变率对空间尺度的敏感性

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摘要 利用中国740站45年降水资料按5种分辨率分气候区计算了降水年际和年代际变率. 降水年际和年代际变率对空间尺度的敏感性分析表明, 中国各气候区降水年际变率对空间尺度的敏感性都随空间尺度的增加而逐渐减小, 且存在明显的季节变化, 而年代际变率对空间尺度的敏感性却随空间尺度的增加而增大, 但不存在季节变化; 由于中国各气候区降水的特殊性, 各气候区降水年际和年代际变率对空间尺度的敏感程度存在不可忽视的差异. 在年际和年代际尺度上, 西南地区降水变率对空间尺度都是最敏感的, 因而该区域降水年际和年代际变率信号的检测最困难. 而华南地区在年际尺度上比较敏感, 年代际尺度却不敏感, 但华南地区在年际和年代际尺度上区域内降水分布的非均匀程度对空间尺度的敏感性都最大.

关键词 [中国降水](#) [年际和年代际变率](#) [敏感性](#) [空间尺度](#)

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Sensitivity of interannual and interdecadal precipitation variability over China to spatial scale

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Abstract With the precipitation observation of 740 stations over China, the interannual and interdecadal precipitation variabilities over 6 climate subregions are calculated with respect to 5 resolutions separately. The analysis shows that the sensitivity of the interannual precipitation variability to spatial scales in all the subregions over China decreases gradually with the increasing in spatial scales and there is a significant seasonal change, whereas the sensitivity of the interdecadal variability increases with the increasing in spatial scales and there is no seasonal change. Because of the particularities of precipitation, there are some significant differences in the sensitivities of the interannual and interdecadal precipitation variability to spatial scales for different climate subregions over China. On the interannual and interdecadal scales, the highest sensitivity of the precipitation variability to spatial scales is in the southwestern China. So it is the most difficult region to test the signals of the interannual and interdecadal precipitation variability there, whereas in the southern China, there is a relatively high sensitivity on the interannual scale, and little sensitivity on the interdecadal scale. Nevertheless, the inhomogeneity of precipitation over southern China is most sensitive to spatial scale both on interannual and interdecadal timescales.

Key words [Precipitation over China](#); [Interannual and interdecadal variability](#); [Sensitivity](#); [Spatial scale](#)

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