研究报告

我国陆地植被净初级生产力变化规律及其对气候的响应

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摘要　　在GIS系统的支持下，利用卫星遥感资料和地面气象观测资料，构建了基于光能利用率的植被净初级生产力(NPP)遥感模型，估算了我国陆地1982—2000年1—12月植被NPP，分析了1982—2000年我国不同植被类型NPP的季节性和年际性变化规律，基于像元空间尺度讨论了植被NPP对气候的响应关系. 结果表明，我国植被NPP年内季节性变化规律明显；我国主要植被类型年NPP在1982—2000年基本呈上升趋势，增长幅度最大的是落叶针叶林，增长幅度最小的是草地；1982—2000年，NPP年际间波动最大的植被类型是常绿阔叶林，年际间波动最小的植被类型是草地. 通过NPP对气候因子(降水、温度)变化的响应分析表明，我国降水对植被NPP季节性变化的驱动作用高于温度，气候因子(降水、温度)对北方植被NPP季节性变化的驱动作用高于南方；我国气候因子(降水、温度)对NPP年际变化的驱动作用(强度、方向)随季节
及纬度的不同而不同.

关键词　　遥感数据　净初级生产力　变化趋势　季节相关　年际相关

分类号

Variation trends of China terrestrial vegetation net primary productivity and its responses to climate factors in 1982-2000.

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Abstract

  A new estimation model of vegetation net primary production (NPP) based on remote sensing data and climatic data was presented, with which, the NPP of China terrestrial vegetation in 1982-2000 was estimated, and the intra- and inter- annual variation patterns of the NPP and its responses to climate factors were studied. The results showed that there was an obvious seasonal regularity in the intra-annual variation of the NPP. In 1982-2000, all the terrestrial vegetation types presented an increasing annual NPP, with the greatest increment for deciduous needle leaf forests and the smallest one for grasses. Evergreen broadleaf forests had the largest inter-annual variation, while grasses had the smallest one. Comparing with temperature, precipitation played a stronger driving role in the intra-annual variation of the NPP, and the effects of precipitation and temperature were more obvious in North China than in South China. The driving roles of the climate factors varied with season and latitude.

Key words　remote sensing data　net primary production (NPP)　variation trend　seasonal correlation　inter-annual correlation

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