

论文

夏季东北亚阻塞高压年际变化的一个物理机制

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收稿日期 2004-5-10 修回日期 2005-9-19 网络版发布日期 接受日期

摘要 根据实际观测资料反演获得描述大气环流演变的空间谱函数后, 从改进的高截断谱模式途径出发研究了夏季东北亚阻塞高压年际变化的物理机制. 结果表明, 前期外部热源强迫的空间分布大致为El Niño型分布时, 外部热力强迫导致大气环流演变中波波相互作用主要表现为纬向2波的相互作用; 波流相互作用主要表现为经向2波和3波与反映基本流中的经向1波的相互作用. 这样使得500 hPa高度场上东北亚地区为一相对正异常区, 为夏季东北亚阻塞的频繁发生提供了有利的大气环流背景. 而前期外部热源强迫大致为La Niña型分布时, 外部热力强迫则导致大气环流演变中波波相互作用主要表现为纬向1波的相互作用; 波流相互作用主要表现为经向2波和4波与反映基本流中的经向2波的相互作用. 从而使得500 hPa高度场上东北亚地区出现相对负异常, 抑制了夏季东北亚阻塞的发生.

关键词 [夏季东北亚阻塞高压](#) [年际变化](#) [波波相互作用](#) [波流相互作用](#) [高截断谱方法](#)

分类号

DOI:

A mechanism for interannual variations of Northeast Asian Blocking High in summer

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Received 2004-5-10 Revised 2005-9-19 Online Accepted

Abstract By inversion of spatial spectral functions describing the atmospheric circulation variation with observational data, we study the mechanism for interannual variations of summer Northeast Asian Blocking High with an improved high truncated spectral model. The results showed that when the external thermal forcing distributed as an El Niño pattern, there were wave-wave interaction of wave 2 and wave-mean flow interactions between wave 2 and wave 3 in meridional direction and mean flow of wave 1 in meridional direction. Under such a case, there were positive anomalies over Northeast Asia on the 500 hPa geopotential height field, which provided favorable atmospheric circulation background for the frequent occurrence of Northeast Asia Blocking High during summer. When the external thermal forcing distributed as a La Niña pattern, there were wave-wave interaction of wave 1 and wave-mean flow interactions between wave 2 and wave 4 in meridional direction and mean flow of wave 2 in meridional direction. In this case, there were negative anomalies over Northeast Asia on the 500 hPa geopotential height field, which retained the occurrence of Northeast Asia Blocking High during summer.

Key words [Summer](#) [Northeast Asia Blocking High](#); [Interannual variation](#); [Wave-wave interaction](#); [Wave-mean flow interaction](#); [High truncated spectral model](#)

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