

## 华南前汛期开始和结束日期的划分

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收稿日期 2007-1-4 修回日期 2008-5-27 网络版发布日期 2008-9-17 接受日期

**摘要** 本文利用48年(1957~2004年)中国站点逐日降水资料和同期NCEP/NCAR逐日再分析资料,研究了华南前汛期的开始和结束时间的划分问题.首先,选择了研究华南前汛期问题的区域和代表站点,然后对降水量、水汽(可降水量,水汽通量,水汽通量散度)、垂直速度和假相当位温等物理量的演变特征进行分析,发现:前汛期起、止前后上述要素均有阶段性的突变.其中4月第1候(19候)是华南前汛期的开始,可降水量、水汽通量和假相当位温等增加显著,对流开始活跃,水汽通量散度也由辐散变为辐合,降水量明显增加.但4月份总体雨量不强,主要为锋面降水.5月份随夏季风爆发,水汽继续增加,对流活跃,进入季风降水阶段;夏季风降水盛期时段主要集中在6月份.6月第4候(34候)前汛期结束,各降水指标骤减.然后根据降水和环流指标,提出了华南前汛期开始和结束日期的划分标准,定义了逐年的开始和结束日期.最后对华南前汛期开始期之前、之后以及结束期之前、之后的大气环流背景做了对比分析.指出,前汛期开始前,环流形势有利于华南地区增暖增湿;开始期以后则有利于冷空气南下,造成连续降水,使华南进入前汛期.而前汛期的结束,则是由于东亚大气环流的季节调整,尤其是西太平洋副热带高压的第一次北跳所造成的.

**关键词** [华南前汛期](#) [开始期和结束期](#) [锋面降水](#) [季风降水](#) [大气环流的季节调整](#) [副高北跳](#)

分类号 [P468](#)

DOI:

## Onset and end of the first rainy season in south China

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Received 2007-1-4 Revised 2008-5-27 Online 2008-9-17 Accepted

**Abstract** Onset and end of the First Rainy Season (FRS) in South China are defined in this paper using daily rainfall data and NCEP/NCAR reanalysis daily data for the period 1957~2004. After choosing a reasonable area and representative stations in South China, evolutions of variables including rainfall, precipitable water (PW), water vapor flux (WVF), vertical velocity, and potential pseudo-equivalent temperature (PPET) are analyzed. Results show that all these variables have experienced obviously staggered changes around the onset and end. The averaged beginning date of FRS occurs in pentad 19 (1st pentad in April), as the precipitation increases outstandingly, in accordance with dramatic increments in PW, WVF and PPET. Meanwhile the WVF changes from divergence to convergence, accompanied by gradually enhanced vertical activities. It rains not too much in April which depicts the features of frontal precipitation. After the East Asian summer monsoon outbreaks in May, South China enters a period with much more precipitation and more vigorous convections. The peak of the rainy season is in June. Not until pentad 34 (the 4th pentad of June) that FRS comes to the end when all these variables happen to experience a sudden decrease. According to the above analyses, a timetable of annual onset and ending dates of FRS in South China is given by choosing threshold criteria. Investigations on the potential height and wind fields before and after the beginning (ending) pentads show that the climatological atmospheric circulations are in favor of the increase in temperature and humidity before the beginning and in favor of the southward movement of cold air after the beginning so as consequently to cause remarkable increase in rainfall. As for the ending of the FRS, it is due to the seasonal transition of the general circulation in East Asia, especially due to the first northward shift of the Western Pacific Subtropical High (WPSH).

**Key words** [FRS in South China](#); [Onset and end date](#); [Frontal precipitation](#); [Summer monsoon precipitation](#); [Seasonal transition of the general circulation](#); [North shift of the WPSH](#)

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