

论文

天津市夏季降水日变化特征

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摘要 利用1954—2007年天津市夏季逐时自记降水资料,分析了天津市夏季降水(包括逐小时降水量、降水频次、降水强度以及不同持续时间降水)日变化规律。结果表明:天津市一日内不同时次的多年累积降水量具有显著的日变化特征,呈明显的双峰型,高值分别出现在午后17时和午夜02时。逐小时降水强度与降水量的变化特征非常一致,而多年累积降水频次在凌晨02时至08时较高,之后至11时逐步降低,11时至24

时变化不大。降水量与降水频次及降水强度的关系均达到显著性水平($P < 0.001$),但逐小时降水强度与降水量相关性明显高于降水频次,表明降水量变化与降水强度有直接的关系,而降水频次对累积降水量的贡献占较小的权重。持续不同时间降水事件的发生次数在一日内的变化特征明显不同,长时性降水峰值集中在清晨,而短时性降水尤其是1-3 h降水主要以午后为主。

关键词 [天津市](#) [夏季降水](#) [日变化](#)

分类号 [P426.61⁺4](#)

Diurnal variation of summer rainfall in Tianjin, China

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Abstract Based on hourly self-recording rain-gauge data, diurnal variations of summer rainfall including hourly rainfall amount, frequency, intensity and different duration rainfall events in Tianjin were analyzed. The results show that accumulated rainfall amount of diurnal different time appears peak values at 17:00 and 02:00, respectively. The variation trends of hourly rainfall intensity and diurnal rainfall amount are consistent, whereas accumulated rainfall frequency is higher from 02:00 to 08:00, followed by a gradual decrease till 11:00 and no significant change from 11:00 to 24:00. Although rainfall amount correlates with both rainfall frequency and intensity significantly ($P < 0.001$), the correlation with hourly rainfall intensity is significant, which indicates that the diurnal change of rainfall amount is influenced by rainfall intensity. The rainfall frequency is less contribution to diurnal variation of hourly accumulated rainfall amount. Large differences are found in diurnal variation frequency for rainfall events with different durations. The peak of rainfall events with long duration occurs at early morning, while short duration rainfall events often appear in the afternoon, especially 1-3 hours rainfall.

Key words [Tianjin](#) [Summer rainfall](#) [Diurnal variation](#)

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