Characteristics of summertime afternoon precipitation in the Taipei urban area during 1998-2007
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Abstract

More than one-fourth population of Taiwan (~6.5 millions) is concentrated within the Taipei urban area. This populated district constitutes a unique basin terrain feature with two river valleys connected to the open ocean and is one of the most urbanized regimes in Taiwan. Recent observational evidence has suggested a climatological trend of increased afternoon thunderstorm activities during summer in the Taipei urban area; however, little is known about the spatial variation of their associated precipitation and its possible relationship with the urbanization. With the availability of dense surface and radar observing network deployed around the Taiwan island in recent years, it becomes possible to explicitly address this unresolved scientific issue. The primary objective of the study is to document the spatial distribution and intensity of summertime afternoon precipitation over the Taipei urban area in the past decade from 1998 to 2007, and particularly understanding of how these observed characteristics relate to the meteorological factors and urban effects is explored.