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Indicative significance of thermal effects over the Tibetan Plateau to the onset of plateau summer monsoon

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In order to discuss whether there exist some indicative significance of thermal effects over the Tibetan Plateau to the onset of plateau summer monsoon, the relationship between plateu thermal effects and plateau summer monsoon were studied by utilizing monthly mean ECMWF reanalysis data, monthly index of intensity departure of surface heating fields over the Tibetan Plateau (B-H) and daily precipitation data from China meteorological data sharing service system during 1979-2011. The correlation analysis and composite analysis are the main statistical methods to process the data. The results show that B-H is well correlated with Traditional Plateau Monsoon Index (TPMI) and Dynamic Plateau Monsoon Index (DPMI) . But there is a time lag of 1-3 months between B-H and DPMI, especially in the dry season. When the thermal effects over Plateau are stronger in February, the earlier onset of the plateau summer monsoon and the stronger intensity in the beginning of the onset period can be caused.

Key words: The Tibetan Plateau, Thermal effects, Plateau summer monsoon

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