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Possible Mechanism of Qinghai - Tibet Plateau and Pacific Vertical Movement Affecting Chinese Climate

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The vertical movement of air has an important influence on precipitation. The Qinghai-Tibet Plateau (QTP) and the Pacific Ocean (PO) are important influence factors on China's climate. It is of great significance to study the influence of the vertical movement of the Qinghai-Tibet Plateau on China's climate. Comparing the influence of the vertical movement of the Qinghai-Tibet Plateau and the Pacific Ocean on the climate in China, it is found that, in the winter, the plateau is a relatively shallow sinking movement system, the maximum sinking height at 500hPa, the summer is a relatively deep upward movement system, the maximum height of the ascending movement at 600hPa, the Pacific, the maximum ascending and sinking height are 300-400hPa and 700hPa respectively; In winter, the ground air temperature and pressure in China have positive feedback on the vertical movement of the Qinghai-Tibet Plateau and the Pacific, and the opposite is feedback in summer. In winter and summer, precipitation has significant negative feedback on the vertical movement of the plateau and the Pacific. In winter, the negative feedback area of the vertical movement on precipitation is in the southern of the Yangtze River, and the Pacific is in the eastern part of the plateau and the Jianghuai basin. The possible reason is that they are simultaneous affected by the cold air from Siberia in winter, influenced by the movement of the plateau low pressure and the Pacific subtropical high in summer. The results of this study will provide the climate framework of vertical movement of the atmosphere in the China and the North Pacific Ocean, and some theoretical basis of comprehensive understanding the China's climate laws and forecasting the climate change.