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Title: Short-term climate fields change induced by a mesoscale tropical cyclone

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Abstract:

The snow cover anomaly in winter and spring over the Tibetan Plateau may have considerable effects on regional climate, especially on South and East Asian summer monsoon rainfall. In this study, it is shown that a mesoscale tropical cyclone over the North Indian Ocean can induce short-term climate fields change in East Asia by increasing snow cover over the Tibetan Plateau. The observations show that tropical cyclone 04B in October 1999 increased the snow cover over the Tibetan Plateau markedly, and that the positive snow cover anomaly induced short-term climate anomalies in surface temperature, sensible heat flux, latent heat flux and soil temperature of the Tibetan Plateau in the following months.

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