Simulation of 1961-2000 summer monsoon onset over Vietnam using a regional climate model

Thanh Ngo-Duc1*, Trung Nguyen-Quang1

1Department of Meteorology, Hanoi University of Science, Vietnam

This study aims to investigate summer monsoon onset dates over Vietnam and surrounding regions by using the Regional Climate Model version 4.2 (RegCM4.2) driven by the ERA-40 reanalysis data. Comparison of the 1960-2001 averages of wind fields at 200 and 850 hPa shows the consistency of RegCM4.2 with ERA-40. However, there are large differences in air temperature at the low level of 850 hPa, which are mainly attributed to the resolution difference between RegCM4.2 and ERA-40. Over Vietnam, monsoon onset date varies considerably among the regions. During the 1960-2001 period, the earliest onset generally occurs around April 15 in the western part of the Highland region and the latest onset occurs early June in the north. A long-term trend analysis shows that the monsoon onset dates over South Vietnam (North Vietnam) have shifted to approximately 0-10 days earlier (0-15 days later) in recent decades.

Keywords: Asian summer monsoon, monsoon onset, regional climate model, trend analysis