

THE SEASONAL MEAN RESPONSE OF THE ASIAN WINTER AND SUMMER MONSOON TO ENSO EVENTS

SHIYAN TAO

Institute of Atmospheric Physics,
Chinese Academy of Sciences, Beijing 100080, China

QINGYUN ZHANG

Institute of Atmospheric Physics,
Chinese Academy of Sciences, Beijing 100080, China

By composing seasonal mean anomalies patterns for five El Nino (La Nina) years, it is found that the composite charts of seasonal mean anomalies of the geopotential height at 500hPa from these two groups show asymmetric response of winter circulation over Asia to ENSO events, i.e. during winter in El Nino (La Nina) years the circulation pattern in East Asia is not favorable (favorable) for the outbreaks of cold air southward leading to weak (strong) winter monsoons; and that during winter in El Nino (La Nina) years there is above normal (below normal) precipitation in south China (including the Tibetan Plateau) leading to above normal (below normal) soil moisture content in these areas which could delay (quicken) and weaken (strengthen) the spring and summer heating of the land masses which results in weak (strong) summer monsoons.

We also found that during winter in strong El Nino years there is a teleconnection pattern in Indian Ocean and Asia called IA pattern which is Similar to PNA pattern in Eastern Pacific and North America. The IA pattern is responsible for the processes bringing about interannual variability of Asian winter and summer monsoons.

Key words: Asian Monsoon, ENSO Events.