Geophysical Research Abstracts
Vol. 14, EGU2012-13950-1, 2012
EGU General Assembly 2012


# Cause and Anomalous Characteristics of the South China Sea Monsoon Trough Producing Heavy Rainfall in South China

H Yang, C Y Li, and J Pan

State Key Laboratory of Numerical Modeling for Atmospheric Sciences and Geophysical Fluid Dynamics, Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing 100029, China

Atmospheric processes associated with the South China Sea (SCS) monsoon trough which caused the heavy rainfall in pentad 3 of August 2007 in South China are analyzed using the reanalysis data of NCEP and satellite images. The results indicate that the Asian summer monsoon trough has independent space structure, which convergence in the low layers and divergence in the high layers are in the south of the Asian summer monsoon trough. The climate analyse shows that the Indian monsoon trough and the SCS summer trough all arrive their maximum in August. The SCS monsoon trough in pentad 3 of August 2007 locate in South China coastal areas and have strong intensity. The convergence in the low layers and divergence in the high layers are also stronger. The Indian monsoon trough is also stronger. The strengthened South Asian high locating over the Tibetan Plateau is the main cause for the strong Asian monsoon trough. The Subtropical High in the Western Pacific stands over Japan and is intensified, which offers condition for the northward movement and enhancing of the SCS monsoon and monsoon trough. The increased temperature over the Tibetan Plateau results the stronger easterly in the upper-level and westerly in the low-level, enhancing convergence in the low layers and divergence in the high layers of the SCS monsoon trough. The long-wave trough in the westerly belt is intensified and goes deep to Southwest China, which causes the SCS monsoon trough stronger. The SCS monsoon trough has intraseasonal period. The intraseasonal oscillation has important effect on the northward movement and enhancement of the SCS summer monsoon trough.