Geophysical Research Abstracts
Vol. 14, EGU2012-1337, 2012
EGU General Assembly 2012

Observational Rainfall change analysis of tropical cyclones making landfall in Zhejiang of China

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Being accompanied by torrential rains, tropical cyclones (TCs) are the most devastating natural disasters in Chinese coastal provinces, inflicting huge losses in property and human life. But most of these casualties occurred in Zhejiang and 140 people were killed in Zhejiang Province annually, even though the average number of TCs made landfall in Zhejiang is only 0.9 and it is much lower than that for Hainan, Guangdong and Fujian provinces. In other words, Zhejiang Provinces is more vulnerable to landfalling TCs than Fujian and Guangdong. Despite the significant impacts of torrential rainfall from TCs at landfall, predicting rainfall associated with TCs is a major operational challenge. Therefore, better understanding the rainfall change and the associated reasons during TCs landfall is an important step toward disaster prevention and mitigation.
This study will examine the spatial distribution of TCs rainfall during making landfall in Zhejiang Province of China. We will use rainfall observations, vertical wind shear data, and TC motion data to examine the relationship between the storm motion, environmental vertical wind shear, and TC rainfall asymmetry. We will also investigate how these relationships vary for different stages when TCs made landfall in Zhejiang. Detailed advances will be shown in the oral presentation.