



## **Evidence of terrigenous organic matter exported to deep-sea of South China Sea during super typhoon Haiyan (Yolanda)**

Hsing-Chien Juan (1), Chih-Chieh Su (1), Yuan-Pin Chang (2), and Yu-Haung Chen (1)

(1) Institute of Oceanography, National Taiwan University, Taipei, Taiwan (r04241301@ntu.edu.tw), (2) Department of Oceanography, National Sun Yat-sen University, Kaohsiung, Taiwan

Recent studies state the abundance of particulate organic matter (POM) could transfer rapidly from land to deep sea basin under the conditions of extreme climate event and has an effect on local carbon cycle. However, the transport processes and mechanisms of terrigenous sediments into deep sea basin are still unclear. South China Sea (SCS), the largest marginal sea located beside western Pacific Ocean which is one of the area encounters the most frequent typhoons, received 700 million tons of sediments and a significant amount of terrestrial organic matter per year. In this study, we present the analysis results of total organic carbon (TOC), organic C/N ratio and  $\delta^{13}\text{C}$  of sediments collected from the SCS deep sea basin by gravity cores during 2014 and 2016. Our results suggest both C/N ratio and  $\delta^{13}\text{C}$  of turbidite at core-tops might be affected by terrestrial organic matter which was delivered from central Philippines by super typhoon Haiyan (Yolanda). Although the TOC concentration of the typhoon related deposits (0.50%) is slightly less than non-event layers (0.57%), the low sediment accumulation rate (0.22cm/yr) during non-event periods, compare to typhoon related thick turbidite layer ( $\sim 87$  cm) implies the super typhoon may play an important role on export terrestrial organic matter into deep sea basin and has impact to carbon cycle of SCS.