Influences of ocean disasters on coastal environments and marine ecosystems - typhoon monitoring, evaluation, and coastal management

Danling Tang\textsuperscript{a}, Guangjun Sui\textsuperscript{b}, Qilin Wan\textsuperscript{c}, Zhangjin Wei\textsuperscript{b}, Minghao Shen\textsuperscript{b} and Hui Zhao\textsuperscript{a}

\textsuperscript{a}South China Sea Institute of Oceanology, Chinese Academy of Sciences, 164 West Xingan Road, 51030 Guangzhou, China

\textsuperscript{b}Guangdong University of Foreign Studies, 2, Baiyun Dadao Bei, 510420 Guangzhou, China

\textsuperscript{c}Institute of Tropical and Marine Meteorology, China meteorological Administration, 6, Fujin Road, 510080 Guangzhou, China

lingzistdl@126.com

Typhoon is one of the most serious disasters in the world that cause huge economic loss in coastal zone of China every year. The present paper investigates influences of typhoon on coastal environments and marine ecosystems, base on satellite remote sensing observations, and also discusses on characteristics and mechanisms of typhoon hazards chains. Two large typhoons Fengshen and Hagubit of 2008 have been compared in terms of forecast, monitoring, influence on coastal zone and marine phytoplankton, and disaster evaluation.

The study show that typhoon can induce large phytoplankton blooms and contribute to primary production by providing nutrients to ocean surface water, and economic loss in the coastal zone can be largely affected by wind-speed, typhoon movement, rainfall, and location of typhoon track and government responses. With the development of space technology, information about the land, ocean, atmosphere and meteorological parameters can be routinely available which will help scientific community in getting information about the damage natural hazards, and therefore one can get information about early warning of an impending natural hazard. This research is supported by the Group Program (Typhoon, 2008) of Natural Science Foundation of Guangdong, China, and also supported by Project of Knowledge Innovation Program of SCS, CAS (LYQY200701). Guangming Zheng and Danling Tang, 2007, Offshore and nearshore chlorophyll increases induced by typhoon and typhoon rain. Marine Ecology Progress Series, 333:61-74; Zhao H, Dan-Ling Tang, Wang Y, 2008, Comparison of phytoplankton blooms triggered by two typhoons with different intensities and translation speeds in the South China Sea. Marine Ecology Progress Series, 365:57-65; Guangjun Sui, Zhangjin Wei, Dan-Ling Tang, 2008, Synthesized resistant and risk management model of typhoon disaster - Comparison and revelation of typhoon Fengshen and Hagubit. The 9th Pan Ocean Remote Sensing Conference (PORSEC2008). Dec 2008, Guangzhou, China. submitted; Dan-Ling TANG, H ZHAO, B. Satyanarayana, GM ZHENG, RP. SINGH, JH LV, 2008, Enhancement of Chlorophyll-a in the Northeastern Indian Ocean after the 2004 South Asian Tsunami, Int. J. Remote Sensing. In press.

URL: http://lingzis.51.net

Number of words in abstract: 326

Keywords: typhoon - coastal environments - marine ecosystems - coastal management
Technical area: Special subsession on Coastal Environment
Special session: Not specified
Presentation: Oral presentation preferred
Special equipment: No special equipment