Geophysical Research Abstracts
Vol. 14, EGU2012-1078, 2012
EGU General Assembly 2012

The Levels and Distribution of TN, TP and TOC in the South China Sea

H. Wang (1) and D Han (2)

(1) Third Institute of Oceanography, State oceanic Administration,Xiamen,China (why@xmu.edu.cn), (2) Xiamen University, Xiamen, China(daxiong@xmu.edu.cn)

Abstract

The marine biogeochemistries of carbon, nitrogen and phosphorous have come under increased scrutiny because of their close involvement in climate change and coastal eutrophication. The South China Sea is unique in that located in a subtropical zone, and therefore represents an important regime for biogeochemical studies. However, to our knowledge, few data are available for total nitrogen (TN), total phosphorous (TP) and total organic carbon (TOC) in South Sea, China. The present study aims to contribute to the knowledge of their status through investigating the level and distribution of TN, TP and TOC in South China Sea.

A total of 108 seawater samples of 11 sites in south sea, china were collected during August 29- September 4, 2006. An automated and simultaneous method for determination of TN and TOC was applied to all seawater samples. The combined system allowed simultaneous determination for TOC and TN in the same sample using a single injection and provided low detection limits and excellent linear ranges for both TOC and TN. The risk of contamination has been remarkably reduced due to the minimal sample manipulation and automated analyses. And quantitative analyses of TP in seawater were accomplished by a typical chemical method.

Concentration ranges of TN and TP were 0.06-0.67, and 0.003-0.071 mg/L, respectively, as well as that of TOC were 0.23-2.51mg/L. The values of TN and TP showed that the status of nutrition is relatively better in south china sea than other marine areas. Moreover, the upright change trend of TN concentration level as well as TP and TOC according to the experimental results at the total 11 sites are simultaneity studied. The concentration of TN initial increases with the increasing of the depth, later the value becomes almost constant. In contrast, the concentration of TOC reduces with the increasing of the depth, later the value becomes almost unchangeable. Compared with the trend of TN and TOC, that of TP appears relatively stable. Thus, TP could be regarded as the key factor about eutrophication. This work should provide some useful information to better understand the environmental status of south china sea.

Keywords: Concentration level, distribution, TN, TP, TOC, South China Sea.

Acknowledgments

The work was supported by The National Natural Science Foundation of China (No. 40976050), and the National Public Benefit (Ocean) Research Foundation of China (201105013).