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## Characteristics of organic matter in sediments from the Northern South China Sea

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In this study, content and distribution of organic matters (OM) and lipid biomarkers in surface sediments from northern South China Sea (SCS) were identified to reveal the sources and transport of fine-grained sediments. Organic matters and lipid biomarkers exhibited distinct spatial variation in northern SCS. Terrestrial discharge from the Pearl River and some mountainous rivers in southwestern Taiwan may contribute to the relatively high organic matters in the corresponding sea areas. The detection of unsaturated fatty acid homologues suggested the algal and/or bacterial OM contribution to surface sediments. The composites and distribution of lipid biomarkers indicate their mixed sources from terrestrial plants, marine algae and bacterial. Together with the proof of clay mineral composites in the sediments, the results suggested that the current, including the Guangdong Coastal Current and Kuroshio Current, control the transport and distribution of terrestrial sediment and the sedimentary environment in the northern SCS.

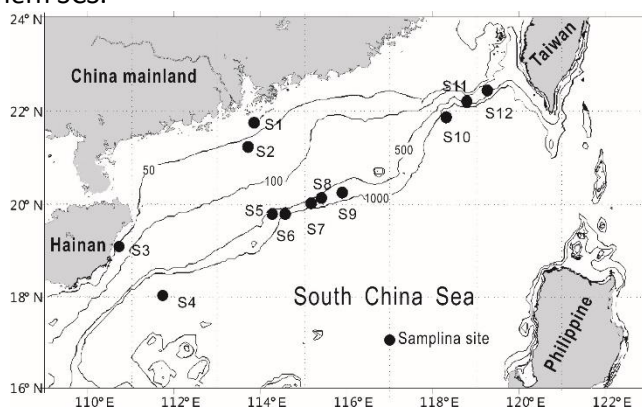


Figure 1: Sampling locations in the northern SCS

The light loss of n-alkanes in the four samples, collected from where the existence of gas hydrate deposit had been proved, suggests biodegradation to some degree. The four samples also obtained a little lower  $^{13}\text{C}$  than other samples. Therefore, the carbon isotopic compositions, combined with the light loss of n-alkanes and the OM content, can evidence the conclusion that these sampling sites are likely to be associated with a gas venting system or a gas hydrate setting.

### References:

- [1] Liu Z et al (2010) Marine Geology 277(1-4): 48-60
- [2] Bakel A et al (1994) Organic Geochemistry 21(6-7): 595-602

