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Surface Sediment Density and Moisture Content in North slope of South China Sea

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Marine engineering geology is mainly based on the actual project to study the seabed. This provides a variety of engineering geological parameters for the development of marine engineering(Zhu et al., 2016).This is an early job. The physical properties of the surface sediments collected by the box pattern can reflect some of the characteristics of the marine environment in the sea . Density and water content as the basis of indicators, and marine ecological environment is closely related. In this paper, the use of 2015 South China Sea north of the integrated voyage and the 2016 South China Sea and Lv song Strait share voyage. Sediment sampling and corresponding physical property tests were carried out on the Shen hu continental slope, Dongsha slope and Taiwan shoal slope. Understand its basic engineering geological parameters, and provide data support for later related work.

The research area of this paper is mainly from the northern slope of the South China Sea. From north to south in turn selected Taiwan shoal slope (3 stations), Dongsha slope (4 stations), Shenhu slope (6 stations) 3 land slope area, a total of 13 stations. Station selection in the continental slope of the slope or on the slope area. The slope of the area is larger and the station depth varies from 535 to 2390 meters.

Compared with the gravity sampler, the box sampler has the advantages of simple operation, easy to use and convenient sampling, but it keeps the original performance of the sediment as gravity sampler. The main concern parameters - density and moisture content of the original sample requirements are lower, so the box sampling samples to obtain samples of

intubation sealed preservation can meet the requirements. After the return of the sample to obtain the density and moisture content of the test, the use of ring knife method to measure the natural density of soil samples, the use of drying method measured soil moisture content. In this paper, only the average density and average moisture content of each cannula were used.

Combined with sediment sample density and water content values, comparison of natural physical properties of sediments from Shenhu slope, Dongsha slope and Taiwan shoal slope.

The slope is larger, the submarine landslide and turbid flow develop. There is a submarine cable near the station. The slope of Taiwan shoal is larger, submarine landslide and turbid flow development. There is a submarine cable near the station. In the 1 and 2 two sites for box sampling. Station No. 1-1 is grayish brown silty clay, soft plastic to plastic, visible holes. Station No. 1-3 is light gray silty clay, plastic to plastic, with holes. 1 and 2 station sediment density water content test results in Table 1.

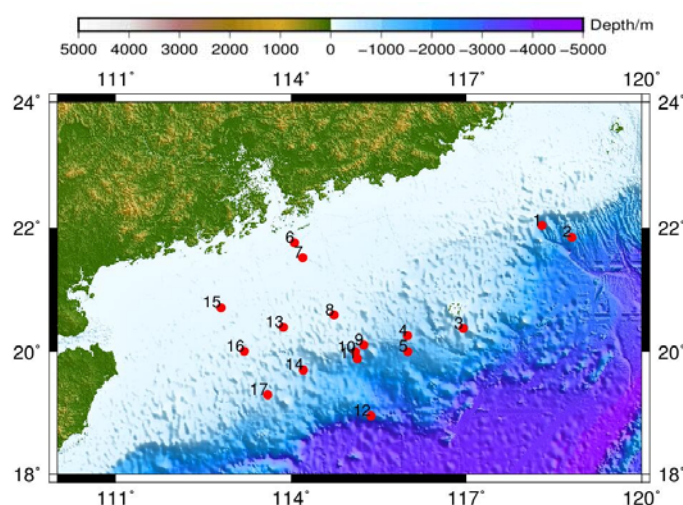


Fig. 1. Location of study site in north slope of South China Sea.

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Table 1 Summary of station information and physical characteristics

Station No.	Longitude(°)	Latitude(°)	Water depth (m)	Average density (g/cm ³)	Average moisture content(%)
1-1	118.2913	22.0362	1308	1.62	71.618
1-2	118.3286	19.8956	1670	1.74	50.214
2-1	118.8057	21.8463	1715	1.55	85.134
2-2	118.8106	21.8414	1745	1.57	79.892
3	116.9471	20.3791	665	1.62	71.3
4	115.9938833	20.26275	590	1.43	79.029
5-1	115.9976	20.0045	1212	1.38	129.994
5-2	115.9974	20.0086	1199	1.39	136.341
6	114.0586111	21.7633333	39.26	1.464285714	77.04918033
7	114.2002778	21.52	54.85	1.777950311	41.98717949
8	114.7347222	20.5986111	107.61	1.97826087	26.3322884
9	115.2427167	20.1150833	1100	1.52	69.736
10	115.1011111	20	1062.28	1.597826087	108.9655172
11-1	115.1337	19.8901	1390	1.42	131.668
11-2	115.1337	19.8901	1390	1.36	156.683
11-3	115.1122	19.9003	1243	1.41	108.664
12	115.3668	18.9592	2398	1.4	127.331
13	113.8683333	20.4	97.48	1.906832298	75.40322581
14	114.2094444	19.7033333	626.55	1.545031056	70.28301887
15	112.4233333	21.4333333	24.28	1.383540373	59.49367089
16	113.2008333	20.0097222	121.74	1.458074534	79.31034483
17	113.6008333	19.3002777	485.05	1.349068	87.5731

Dongsha slope of the original planning box-type station 4 (3-1-3-4), the actual number of 3-1 station only to obtain sandy sediments, the rest of the station or mined or get a small amount of gravel, can be roughly drawn to the waters of the bedrock, Gravel, sand-based, more difficult to sample 3-1 station surface sediment density water content results in Table 1.

Shenhu slope for our first discovery of natural gas hydrate physical sample area (Zhang et al., 2007), in the waters of the box sampling a 14 station 17 station number, station information shown in (Fig. 1), sediment density and moisture content summary results in Table 1. Station No. 5-2 for the green gray clay, soft plastic to plastic, station number 11-4 for the yellow-brown clay, soft plastic to plastic.

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