



## **Sediment analyses of the OR1-1120 cores from the Palm Ridge, offshore southwestern Taiwan**

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In the study, we analyze marine sediment cores obtained from the Palm Ridge, offshore southwestern Taiwan, during the OR1-1120 cruise to study the sediment properties and understand the variation of the deposition environment. Geophysics investigating including multi-beam echo sounder, chirp sonar, and sub-bottom profiles (SBP) provides fundamental information of the study area. Also these geophysics data give the information for the core sites decision. Core sites were adopted based on some critical geology conditions: Core site S1 was the location where gas-plume was observed in the chirp sonar; Core sites S3 and S5 located at a mass transported deposit (MTD) stratum which were determined from the sub-bottom profiles (SBP); S6 was situated at a modern stratum above the same MTD stratum. By the MSCL (Multi Sensor Core Logger) results, both S1 and S6 cores show that the two core sites located at relatively stable deposition environments. The apparent sedimentation rates of S1 and S6 for the last  $\sim 100$  years, determined by using the  $^{210}\text{Pb}$  analysis, are  $0.026\pm 0.009$  and  $0.070\pm 0.016$  cm/a, respectively. For the core sites of S3 and S5, several peak values are observed in the MSCL parameters. Also the apparent sedimentation rates of both cores could not be determined. These features might imply the relatively unstable deposition environments at the core sites of S3 and S5. This is also in good agreement with the information from the SBP results that the two cores located at a MTD stratum.