

## **Distribution and influence factors of rare metal minerals in surface sediments from the northwestern continental shelf of the South China Sea**

WEN YAN<sup>1</sup>, SHUZHUANG WU<sup>1</sup> AND SHUHONG WANG<sup>1</sup>

<sup>1</sup>CAS Key Laboratory of Marginal Sea Geology, South China Sea Institute of Oceanology, Chinese Academy of Sciences, Guangzhou 510301, China (*wyan@scsio.ac.cn*, *szwu@scsio.ac.cn*, *wshhsbq@scsio.ac.cn*.)

Combined with the analysis of the sediment grain size and sediment types, the distribution and influence factors of rare metal minerals in 273 surface sediments from the northwestern continental shelf of the South China Sea were discussed. A total of 18 kinds of heavy minerals were detected, among them the rare metal minerals are mainly zircon, ilmenite, monazite, rutile, xenotime, cassiterite, niobium tantalum, and there is great difference in station appearance rate and content for them. Zircon and ilmenite were detected in more than 90% stations, and the other rare metal minerals were only detected in less than 20% stations. The high values of both zircon and ilmenite occur mainly in the eastern sea area of Leizhou Peninsula and Hainan Island, and the ilmenite content is also higher in large areas of the oceans from the Pearl River Estuary to Mo Yang estuary off the coast. The distribution of the rare metal minerals are mainly controlled by source, type of sediment and water power. These minerals are mainly enriched in the sediments with fine gravel and coarse sand dominated, and with sandy silt dominated sediment mineral content followed.