

Sedimentology and sediment distribution patterns in northern Oman Sea continental shelf

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Abstract

Surface and core sediment samples from the Iranian continental shelf of the Gulf of Oman have been studied using standard sedimentological techniques. Based on the grain size analysis of surface and core sediments, the silt fraction is the common sediment type in the Makran shelf. It ranges from 40% up to 76%. The amount of clay fraction varies from 19% to 54%. Sandy sediments appear in some cores up to 20%. Mean content of organic matter and calcium carbonate in the sediments is around 1.75% and 15.4%, respectively. The sediment distribution pattern in continental shelf demonstrates that generally the grain size gradually decreases from shoreline to the deeper zones. However, some medium to coarse grained sand patches can be found in deeper parts especially in the middle part of the studied area that can be related to sediment supply of ephemeral rivers discharging in to the sea in rainy seasons as well as to the high energy environment. The carbonate content values increase westward where the rivers cross the Zagros carbonate formations, while the eastern parts are more governed by reworking the Makran flysh deposits on the hinterland.

Keywords

Makran continental shelf, Gulf of Oman, Sediment distribution pattern, Sedimentology