MECHANISMS OF SEDIMENT TRANSPORT AND DISPERSION IN A TECTONICALLY ACTIVE SUBMARINE VALLEY/CANYON SYSTEM: ZANTE STRAITS, NW HELLENIC TRENCH.

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RESUME - Les facteurs qui controlent la sédimentation dans le canyon de Zante sont: (a) les glissements des masses continus qui provoquent la création des coulées boueuses et des courants de turbidité et (b) les courants tout le long de l' axe dy canyon qui transportent la matière fine vers le basin de sédimentation.

The Zante submarine valley/canyon system is located within the narrow inner shelf/slope of the Hellenic trench between the coastline of western Peloponnessos and the southern most of the Ionian islands, Zante.

The area is characterised by low tidal and wave energy but is located within a regime of active salt diapirism (Brooks and Ferentinos, 1982) and compressional tectonism associated with the Hellenic Trench (Got et al, 1977; Le Quellec et al, 1980).

Water circulation in the valley/canyon system is wind induced resulting in an upcanyon surface water flow and a downcanyon nearbed flow.

The Pleistocene-Holocene cover of the slope surrounding the valley/canyon system is affected by slumping and creeping caused by earthquakes and salt diapirism resulting in

the formation of debris flow and turbidity current deposits along the floor of the canyon.

Nearbed currents are not strong enough to erode and transport the surficial sedimentary cover downcanyon, but they are able to transport downcanyon any fined grained material which is associated with resuspensions caused by gravity mass movements. This fine grained material is transported down canyon and it is eventually deposited in the perched basins as uniform mud deposits (unifites) (Stanley and Maldonaldo, 1981).

REFERENCES

Brooks, M. and Ferentinos, G., 1982. Tectonics and sedimentation in the Gulf of Corinth and the Zante and Cephalonia channels, Western Greece. Tectonophysics (submitted for publication).

Got, H., Stanley, D, and Sorel, D., 1977. Northwestern Hellenic arc: concurrent sedimentation and deformation in a compressive setting. Marine Geology 24, pp. 21-36.

Le Quellec, P., Mascle, J., Got, H. and Vittori, J., 1980. Seismic structure of southwestern Peloponnesos continental margin. Am. Association of Petroleum Geologists 64, pp. 242-263.

Stanley, D. and Maldonaldo, A., 1981. Depositional models for fine-grained sediment in the western Hellenic Trench, Eastern Mediterranean. Sedimentology 28, pp. 273-290.