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MINERALOGY OF SILT AND CLAY FRACTIONS IN THE SURFICIAL SEDIMENTS OF
THE GRADO LAGOON (NORTHERN ADRIATIC SEA)*

*COMPOSIZIONE MINERALOGICA DELLA FRAZIONE SILTOSA E ARGILLOSA DEI FON-
DALI DELLA LAGUNA DI GRADO (ADRIATICO SETTENTRIONALE)*

Abstract - The composition of detrital and clay minerals in the tidal flats of the Grado Lagoon was determined by X-ray diffraction. The spatial distribution of minerals in silt and clay fractions of the surface sediments shown a higher contents of detrital minerals, a marine source and a selective sedimentation inside the lagoonal basins. A prevalence of dolomite over calcite are observed and a geographic gradient of calcite (maximum contents eastwards - minimum westwards) are found.

Key words: Mineralogy, Silt-clay fractions, Grado Lagoon.

Riassunto breve - *La caratterizzazione mineralogica dei depositi pelitici (siltosi e argillosi) della laguna di Grado evidenzia una composizione essenzialmente detritica del sedimento, una sua provenienza dal mare e una sedimentazione selettiva all'interno dei bacini lagunari. Emerge inoltre una netta prevalenza della dolomite sulla calcite e, in particolare, l'esistenza di un gradiente geografico della calcite con massimi contenuti ad Est e minimi ad Ovest.*

Parole chiave: Mineralogia, Silt-argilla, Laguna di Grado.

Introduction

The distribution of minerals in the lagoonal sediments can be used to investigate the sedimentation processes occurring in these tide-dominated environments. In particular, clay minerals in the clay-sized fraction of sediment are transported and uniformly kept in suspension by the tidal currents and settle when the residual currents are weaker (DRONKERS & ZIMMERMAN, 1982).

Furthermore, with some rare exceptions, they do not undergo significant chemical and mineralogic changes during transport and after sedimentation. For these reasons they may be seen as excellent natural useful tracers to identify sedimentary inputs into the lagoonal basins.

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