

no earthquake takes place, because the fluids and gasses escape to the east and a sub-pressure is created in this space, and at the same time the crust is thin and the pressure the overlying oceanic water exerts on it is big, so the crust breaks and the space the pyrosphere would occupy causing an earthquake, is now occupied by water. Over this area, we notice a momentary drop of the water level, a sub-pressure in the atmosphere and descending air currents. Also, the contact of water with the exposed pyrosphere causes some of it to vaporize and a thick fog is formed locally. The time span of these phenomena is small, because the contact of the water with the pyrosphere causes the crack of the crust to reconnect quickly and calmness is restored.

Spatial and temporal variations in the geochemistry of suspended particulate matter in the shallow deltaic embayment of Northern Thermaikos Gulf, Greece

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The chemical composition of Suspended Particulate Matter (SPM) in the northern Thermaikos Gulf was studied during a six month experiment, carried out from June 2004 to November 2004. Water samples were collected from three different depths (1 m below sea-surface, 10 m depth, 2 m above sea-bottom) and filtered to obtain SPM elemental and Particulate Organic Carbon (POC) concentrations. The geochemical properties of SPM were determined by thin-film X-ray Fluorescence spectrometry.

SPM and POC concentrations exhibited strong spatial and temporal variations, related to the different environmental characteristics such as river discharge, wind/wave-induced resuspension of bottom sediment, biological productivity and anthropogenic interference.

Correlation analysis showed that the elements Al, Si, Fe, Ti, K, Mg, V and Ba, have terrigenous origin, i.e. detrital aluminosilicates minerals. Chromium, Ni and Co are of natural origin; they are derived from Axios and Aliakmon watersheds as mafic and ultramafic detrital material. Sulphur, Zn and Cu are derived from partly treated domestic and industrial effluents. The vertical distribution of POC implies higher biological activity at the upper layer of the water column. A part of Ca represents the autochthonous biogenic fraction i.e. biogenic carbonates. Phosphorus is mainly in the form of organic phosphate.

Synthesizing carbonates with added value for industrial use from the former industrial waste applying methodology of CO₂ mineral sequestration

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The sequestration (liquidation) of CO₂ is defined as catching, deposition and storing of CO₂. Industrial CO₂ can be deposited in the exhausted oil and gas deposits, in unexploitable coal seams or in the aquifers. Different methodology is represented by the binding of CO₂ in minerals (rocks) by the methodology of mineral sequestration (carbonatization). The first group of methods is accompanied with the risks of CO₂ deliberation during transport and deposition of CO₂. Moreover, the storage sites must be located away of the seismo-active zones and expensive monitoring is necessary during hundreds of years.