



Shallow water marine sediments from the Eastern Tyrrhenian Sea (Salerno Gulf): evidences of high resolution climatic variability during the late Quaternary

Lirer Fabrizio (1), Sprovieri Mario (2), Ferraro Luciana (3), Vallefuoco Mattia (4), Cascella Antonio (5), Petrosino Paola (6), Insinga Donatella Domenica (7), Pelosi Nicola (8), Tamburrino Stella (9), and Capotondi Lucilla (10)

(1) IAMC-CNR, Istituto Ambiente Marino Costiero, Napoli, Italy (fabrizio.lirer@iamc.cnr.it), (2) IAMC-CNR, Istituto Ambiente Marino Costiero, Torretta Granitola ((Fraz. Campobello di Mazara, Tp), Italy (mario.sprovieri@iamc.cnr.it), (3) IAMC-CNR, Istituto Ambiente Marino Costiero, Napoli, Italy (luciana.ferraro@iamc.cnr.it), (4) IAMC-CNR, Istituto Ambiente Marino Costiero, Napoli, Italy (mattia.vallefoco@iamc.cnr.it), (5) Istituto Nazionale di Geofisica e Vulcanologia (INGV), Pisa (cascella@ingv.it), (6) Dipartimento di Scienze della Terra – Università degli Studi “Federico II” di Napoli (petrosin@unina.it), (7) IAMC-CNR, Istituto Ambiente Marino Costiero, Napoli, Italy (donatella.insinga@iamc.cnr.it), (8) IAMC-CNR, Istituto Ambiente Marino Costiero, Napoli, Italy (nicola.pelosi@iamc.cnr.it), (9) IAMC-CNR, Istituto Ambiente Marino Costiero, Napoli, Italy (stella.tamburrino@iamc.cnr.it), (10) Istituto Scienze Marine, (ISMAR) UOS di Bologna – CNR, (lucilla.capotondi@bo.ismar.cnr.it)

We present an high resolution multidisciplinary study for the latest part of the Quaternary that combines geochemical, physical and biological investigations of a sediment core collected from the continental shelf of the Tyrrhenian Sea (Salerno Gulf). Calcareous plankton proxies and oxygen isotope stratigraphy were integrated with different dating methods (^{210}Pb and ^{137}Cs , AMS ^{14}C and tephrostratigraphy) and a secular to millennial scale resolution age-depth model for the study area was obtained.

Oxygen isotopic signal and changes of planktonic foraminifera and calcareous nannofossils assemblages allowed us to recognize the most important paleoclimate and paleoceanographic phases.

Two distinct phases, associated to the deposition of sapropel S1 (4.7 kyr long) in the eastern Mediterranean Sea and to the Bronze and Golden ages (1.57 kyr long), were recorded during the early and middle Holocene time interval.

The Medieval Warm Period (MWP)-Little Ice Age (LIA) transition (1462 AD) represents the subsequent strong climatic phase, that coincides with the last global-scale rapid climate change (RCC) event, and is marked by a progressive turnover between planktonic foraminiferal carnivore species and herbivore-opportunistic species.

The onset of a new important cool climatic phase (between 1462 AD and 1940 AD), the so-called Little Ice Age (LIA), expressed by four evident [U+F064] 18OG.ruber oscillations, coincides well with the four minima in solar activity (Wolf, Spörer, Maunder and Dalton events).

Noteworthy, are the data since 1940 AD point to a clear human impact on the marine environmental ecosystem associated to the building of the dam on the Sele River (Salerno Gulf) at 1934 AD.