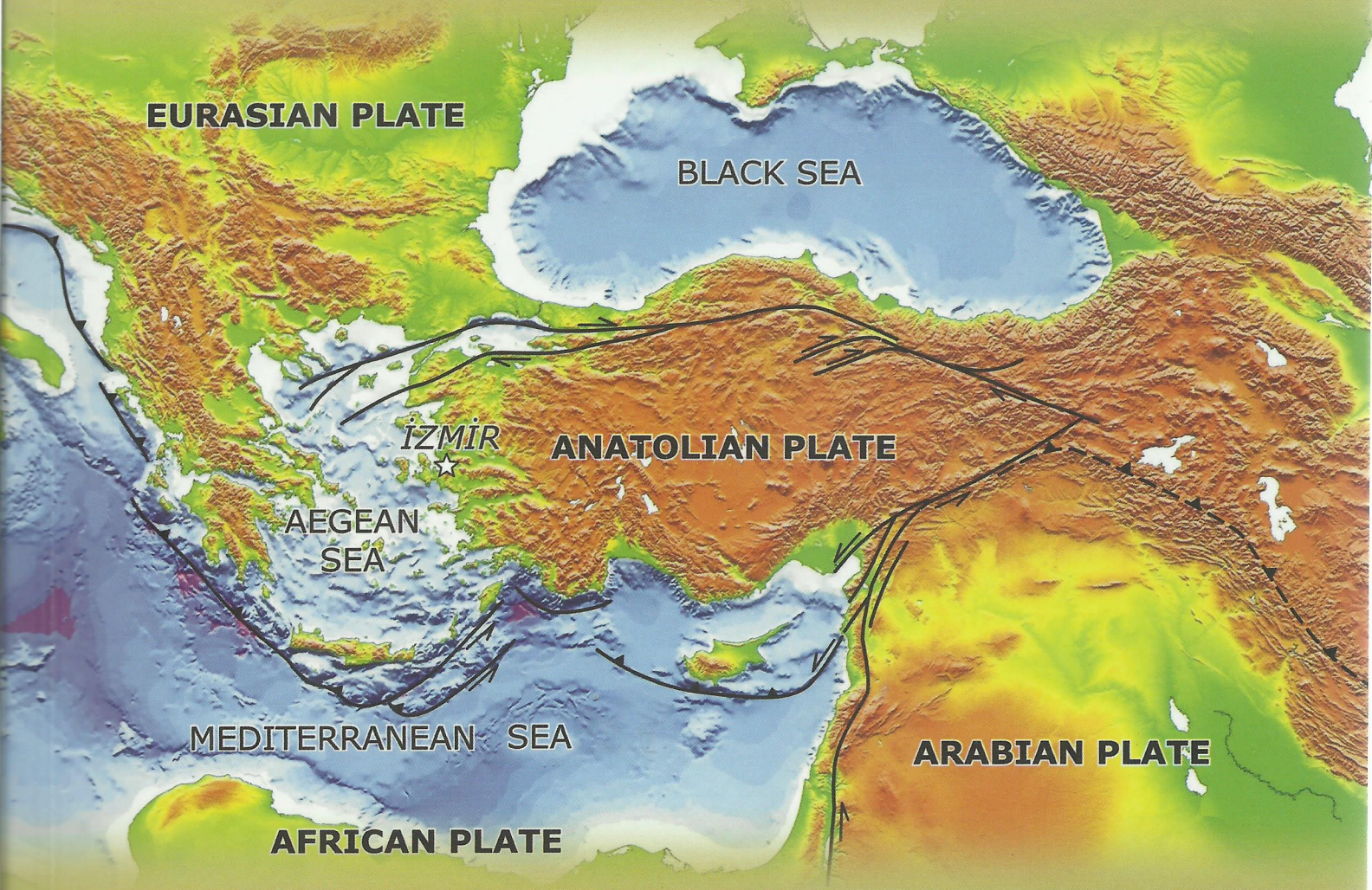
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ABSTRACTS

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İçmecedere Beachrock (Bozcaada-Çanakkale-Türkiye): Results and Significance of Analytical Studies

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The Bozcaada, second biggest island in Turkey, is an interesting region in point of Late Pleistocene-Holocene geological formations. On the south coast of the island eolinites, beachrocks and rhizolithes are widely observed. These geological formations are important for understanding of the paleo-coastal environment. In this study, beachrocks occurring on both sides of the island namely İçmecedere beachrock that was not mentioned before in the literature have been investigated. Petrographic, analytic (XRD and SEM-EDX) and ^{14}C dating studies have been performed in order to clarifying the age and facies of beachrock .

The outcrops of the İçmecedere beachrock extends 20 meters parallel to the coastline and have heterometric structure with poorly sorted including block-sized and also fine clast. For geochemical analyzing and age dating samples have been taken from the three different points of beachrock which have a maximum 40 cm thickness. Calibrated radiocarbon datings from youngest beds yield to 950-750 years and 3860-3560 years from the oldest layers. Based on thin-section studies, beachrock is composed mainly of poorly sorted metamorphic rock fragments. Moreover, the cementing is weak and including cracked fossil shells among grains. SEM analyses were performed to determine the cement micromorphology among grains. The analysis, show that cementation started in intertidal zone and the grain surfaces were covered by micritic envelope. These micritic envelopes are covered by meniscus cement indicating the mixture of sea water and fresh water. Secondary cement which developed on the micritic cover states declining the sea level during the cementing. The older layers of beachrock with bridge cement were cemented during this sea-level declining stage. This period should be contemporaneous the declining of the sea-level at -2m in the Aegean Sea. According to the result of EDX analysis; element abundances in weight percent of micritic envelope and inter-grain cement range as O>C>Ca>Si>Al>Mg>Fe>Cl>Na in decreasing order. The mean value of $\%MgCO_3$ is 5.37 showing high Mg-calcite of cementing carbonate. Moreover, XRD analyses indicate the existence of dolomitic cement. According to stable isotope ($d^{18}O$ and $d^{13}C$) cementing material is ranging from 1.75 to 2.38 for ^{13}C and 1.28 to -1.81 for ^{18}O. These positive values indicate enrichment in heavy isotopes and also increasing in temperature during deposition of cementing material. This period correspond to arid stage at the end of climatic optimum on the Mediterranean (6-3 thousand years).

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Keywords: Beachrock; C-14 dating; coast; Bozcaada