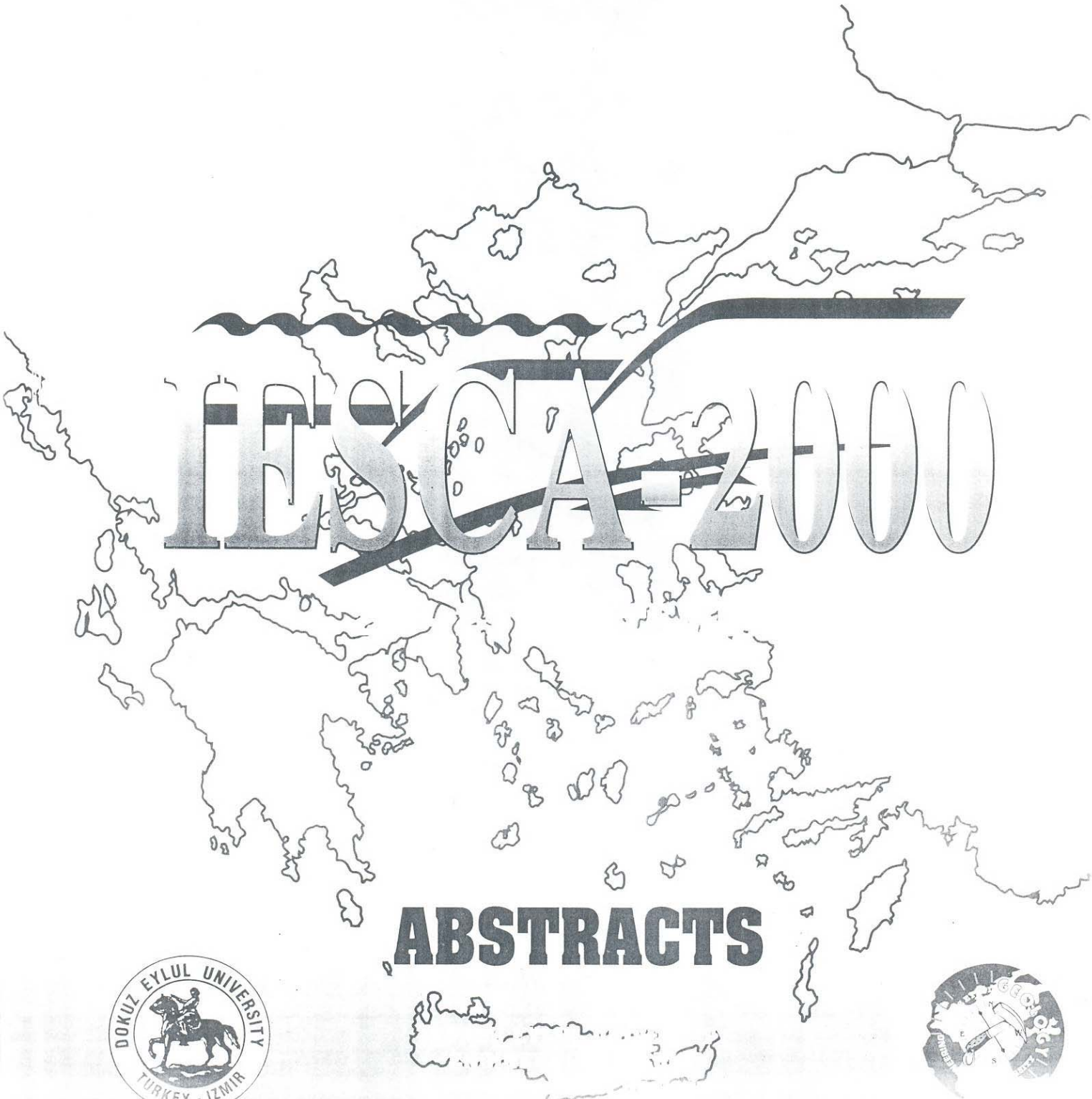
INTERNATIONAL EARTH SCIENCES COLLOQUIUM ON THE AEGEAN REGION



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ABSTRACTS

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The Pavliani Fault Zone: Evidence for westward propagation of the North Anatolian Fault Zone in Eastern Mainland Greece

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The prolongation of NAFZ into the North Aegean has been the object of study of numerous researchers so far. All of them agree that the NAFZ branches out and creates a series of transtensional basins in the Northern and Central Aegean. Further to the west and within mainland Greece the answer to question of the prolongation of the NAFZ has remained quite elusive. An examination of a six-month earthquake sequence (April - November 1983) and field reconnaissance in central-eastern Mainland Greece allowed the delineation of a NE-SW fault zone (Pavliani Fault Zone –PFZ). Several pieces of evidence attest to this: (i) the 1983 earthquake sequence develops in the same, NE-SW direction (ii) fresh, polished fault surfaces were located along the suggested trace of the PFZ, all displaying clear marks of recent activity; (iii) the drainage network is significantly affected, with NE-SW preferred orientation of most major, deeply incised river channels; (iv) there is a well-expressed depression (saddle), between Mt Oiti on the north and Mt Giona on the south, coinciding with the trace of the PFZ; and (v) the zone is aligned with the NE-SW Oreoi Straits that separate the island of Euboia from mainland Greece. This tectonic, elongated graben structure has been assumed by previous authors to be the westernmost tractable feature that could belong to the complex system of the NAFZ within the Aegean region. However, farther to the southwest and within mainland Greece the localization of the PFZ, in perfect alignment with the aforementioned structure, allowed us to presume that the notion that the west-southwestward movement of the Anatolian and Aegean microplates, accommodated through the NAFZ, may have affected the mainland of Greece, giving birth to the PFZ. Since it has been established that the alpine, NW-SE tectonic grain of the Hellenides can be a hard-to-break impediment to the westward advance of the NAFZ, it is not surprising that such structures within mainland Greece cannot be easily identified, as there are numerous tectonic and structural interactions that need to be taken into account.