Geophysical Research Abstracts
Vol. 15, EGU2013-7136-1, 2013
EGU General Assembly 2013

Environmental changes of Northern Anatolia/Black Sea region during the Eemian and the Holocene: pollen and dinocyst records from sediment cores 22-GC3/8

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In order to improve the knowledge about regional climate development in the Eastern Mediterranean, the DFG-Project "Dynamics of Mid-latitude / Mediterranean climate during the last 150 ka: Black Sea / Northern Anatolian Paleoenvironmental Reconstructions" (DynNAP) was established. For this goal, marine cores 22-GC3 and 22-GC8 from SE Black Sea cover the last 140 kyr BP and were studied by high resolution analysis of pollen and dinoflagellate cysts. These records were used to reconstruct vegetation of Northern Anatolia and hydrological changes of the SE Black Sea during the Holocene and the last interglacial. Age-control of the time series is based on shell oxygen isotopes (ostracods, bivalve) correlated to the isotope records of Uranium series dated stalagmites from Solufar Cave, NW Anatolia. The results show a dominance of steppe vegetation during glacial periods and the spreading of oak steppe forest during the deglaciation periods. The interglacial periods are characterized by the development of more humid forest vegetation (*Fagus*, *Carpinus*, *Corylus*, *Ulmus/Zelkova*, *Ostrya*). During both interglacial periods, the Holocene and the Eemian, a Mediterranean – Black Sea reconnection took place, inducing transition from freshwater/brackish to more marine conditions. Patterns of vegetation and hydrological changes during interglacials were not identical during both interglacials. During the Eemian, the submediterranean *Ostrya*-type dominated during the first half of the interglacial, indicating warm summers, whereas more humid *Fagus-Carpinus* forests dominated in the second half. During the Holocene, the dominance of *Pinus* in pollen record indicates generally cooler conditions than in the Eemian. An increase of anthropogenic indicators such as *Plantago lanceolata*-type, *Rumex*, *Juglans* in the late Holocene suggests elevated human activities in Northern Anatolia. Sea-surface temperature and salinity of the Black Sea achieved significant higher values in the Eemian compared to the Holocene, suggesting a higher Mediterranean inflow into the basin.