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High-Resolution Late Holocene Climatic Records of Lakes and Lagoons at Western Turkey

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This study focuses on climatic and environmental sedimentary records of the last 6000 years in Kucukcekmece Lagoon (Istanbul), Uludag glacial (Bursa) , Yenicaga (Bolu) and Bafa (Mugla) Lakes in western Turkey. The water bodies are located on a N-S transect in western Turkey, and as such their records are important for assesment of Late Holocene eastern Mediterranean climatic changes.
A total of 12 cores varying between 0.6 and 4.8 m are analyzed at 5 mm resolution using Multi Sensor Core Logger (MSCL) having magnetic susceptibilty, P-Wave, density and resistivity sensors, XRF (X-Ray Fluoresance) core scanner multi element analysis at a 0.2mm resolution. The cores are then sampled at 20, 50 and 100 mm intervals for different analyses. The samples are analyzed for total inorganic (TIC) and organic carbon (TOC). The ostracoda and benthic foraminifera shells in the sand size fraction of the sediment samples are identified under binocular microscope and suitable species are picked and analyzed for the stable oxygen and carbon isotope analysis. The cores are dated using AMS 14C analysis.
The data indicate a major dry period during ca 2600-1300 a BP and a wet period during ca 1300-600 BP in the Bafa and Yenicaga Lakes, with the latter period corresponding to the Medieval Warm Period. The Little Ice Age record was found in all three areas with a relatively wet spell in the north and a dry spell in the south. The records show that with delta progradation the Latimian Gulf became isolated from the rest of the Büyük Menderes River estuary at ca 3000 a BP to form the Bafa Lake.