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Sedimentary record of major historical eathquakes in the Shkodra Lake (Northern Albania): possible evidences from textural and radionucleids (^{210}Pb, ^{137}Cs) profiles.

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As lacustrine sediments may represent reliable recorders of seismicity, the Shkodra Lake, which bounds northern Albania and Montenegro, has been investigated within the frame of a NATO **S**cience **F**or **P**eace multidisciplinary project (977 993), dedicated to seismic hazards investigation; this project also includes: GPS kinematics measurements, structural and morphotectonic analyses. Located on the Alpine-Mediterranean seismic belt, northern Albania underwent several earthquakes which magnitudes up to 7. The city of Shkodra, built along the southern coast of the Lake, and its surroundings, underwent the strongest historical earthquakes in Albania. Two major seismic events have occurred in the Shkodra region since the beginning of the 20^{th} century (1905 and 1979); for both, seiche effects have been reported along the Shkodra Lake, indicating probable significant disturbances of lake bottom's unconsolidated sediments. Furthermore, older chronicles reported earthquakes since the IInd century BC.

The Shkodra Lake is the largest one in the Balkans. It is shallow (6m mean depth in the Albanian part) and covers an area comprised between 370 km^2 and 530 km^2 (flood

period). The catchment area is dominated by karstified carbonates but ophiolite massif could have contributed to the sedimentary system. The present-day hydrography is characterized by very minor tributaries lacking coarse and voluminous feeding; no steep underwater slopes, like deltaic foreset, are present, avoiding subaqueous slumps and hyperpycnal currents. Thus, disturbances related to seismic shaking should be mainly *in situ* sedimentary reworking.

In order to study the sedimentary record at two temporal scales, we used an UWITEC^{TM} coring platform and its two types of corers: piston core retrieving 3 m-long sections, short gravity corer. Four long composite piston-cores (up to 7,5 m long) and 16 short gravity cores (75 cm ean length). According to AMS 14C ages (measured at Poznan Radiocarbon Laboratory and calibrated using OxCal software), the long core represents 10 kyrs and the short ones between 4 to 8 centuries. For the whole set, Magnetic Susceptiblity (BARTINGTON^{TM} loop sensor and surface scanning sensor), laser microgranulometry (MALVER^{TM} Mastersizer), XRD on clay fraction, were performed; local MEB with EDS were added, especially for characterization of volcanic ash layers. Further analyses are in process, both for texture (Anisotropy of Magnetic Susceptibility) and content (OM pyrolysis).

In the present communication, we focus on two short cores (in distal and proximal situation with respect to the southeast coast of the lake) which high resolution analysis was specifically dedicated to the search of historical earthquakes traces (2 or 5 mm sampling interval for textural and mineralogical parameters; 5 mm sampling interval for 210Pb and 137Cs radioactive counting). Although the sedimentation is fine-grained and rather homogenous during the last 600 yrs, combination of discrete evolutions and low amplitude breaks in grain-size parameters (generally independant from MS fluctuations) have been evidenced during the last century. Apart from the major texture break which may be correlated with a Drin-Bojana outlet system, small breaks in 210Pb decay curve may be correlated to textural changes and discussed in terms of disturbances related to the last earthquakes, so that an anomalous lack of post-1963 NAE 137Cs decay.