

Environmental Magnetic Study of the Core Sediment From Dabusu Lake, in Jilin Province, China

Masaharu Fukuoka[1]; Nobuhiko Handa[2]; Akira Hayashida[3]

[1] Nagoya Univ.; [2] IAR, Nagoya Univ.; [3] DESS, Doshisha Univ.

In order to reconstruct of climate changes in the Northeast China, we made environmental magnetic measurements of core sediment from a salt lake in the Northeast China. Dabusu Lake is located in the Northwest part of Jilin province, China. We collected two cores sediment from the Lake. The 10.57 m-long sediment core (DB-A: we have no samples for measurement between 4.12 to 9.82 m) were obtained from margin of the Lake, at 119 m above sea level, and 15.92 m-long sediment core (DB-B: we have no samples for measurement between 5.39 to 15.39 m) and from the center part of the Lake at 110 m above sea level. Those core samples mainly consist of black muddy silt and mud. Below 15 m of the DB-B core were white silty sand. We measured low-field magnetic susceptibility (k), anhysteretic remanent magnetization (ARM) and isothermal remanent magnetization (IRM) of u-channel samples at 1 cm interval. The IRMs acquisition curves are classified into two types. Above 5.5m of the DB-B core were almost saturated at the field around at 0.3T, suggesting that contain low coercivity magnetic minerals. Below 15 m of the core were not saturated at 0.3T. These parts of the sediment contain high coercivity magnetic minerals, probably antiferromagnetic minerals. It is suggested that coercivity parameters shows influx changes of magnetic mineral about origin and transport, influenced by glacial-interglacial cycle. Magnetic-concentration parameters (k , $kARM$, and IRM) show short-term and abrupt increases observed at several horizons, clearly correlated with magnetic-grain size parameters ($kARM/k$ and $kARM/IRM$). Since the influx of river into Dabusu Lake is not observed, it is suggested that rhythmic fine-grained of magnetic minerals corresponds to water depth changes, possibly caused by precipitation.