

Climate changes in Lake Biwa based on concentration of biogenic silica in surface sediments

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In order to clarify the relationships between analysis data of sediment and meteorological observation record, bottom surface sediments of Lake Biwa were cored and analyzed biogenic silica content.

Depth profiles of biogenic silica were converted into those of time profiles. Then, coefficients of correlation were calculated among the content and monthly, seasonal and annual observation records. Observation records include those of precipitation, mean temperature, daylight hours, mean wind velocity and amount of solar radiation.

The results show that there is a strong correlation between the content data and that of mean temperature especially in spring and autumn, however, other categories showed very weak correlations. The reason for strong correlation of spring and autumn may be related to bloom of phytoplankton. Anthropogenic influence to phytoplankton bloom can be neglected before 1950's. Before that time, biogenic-silica content and mean temperature still showed statistically significant correlation.