

[H-QR23_1AM2]Diachronic dynamics of human-environment interactions

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Humans have attained their specific development by indigenous cultures and evolved through environmental adaptation. The session raises issues of human-environmental interactions, views from diverse changes of climate, ocean, land and biota having made striking influence on humans. It welcomes various fields from human-environment change and their chronometric dating among Quaternary disciplines.

11:15 AM - 11:30 AM

[HQR23-P06_PG]Total organic carbon fluctuation from the lake sediments in central Japan during the past 200 ka

3-min talk in an oral session

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Lake sediment is a useful recorder of paleoclimate in the mid-latitude regions. However, the life span of a lake is shorter than that of the marine sediments or polar ice sheets in the most cases. Furthermore, a general condition of a lake may be disturbed by an accidental event. Then, we try to combine a climate proxy of total organic carbon (TOC) records from several lake sediments central Japan, and have compiled an average TOC in the past 200 ka which may correspond to the regional climate change. Used data include Lake Biwa (BIW07-5, 6 core: 0-50 ka, BIW08-B core: 0-200 ka), Lake Nojiri (NJ88+NJ95 core: 0-72 ka), Takano Formation (TKN-2004: 38-160 ka). The time resolutions in those data are between 20-100 years. TOC data of the six sediment cores were normalized as dividing a data by standard deviation. Their fluctuation curves of the normalized TOC were matched by the method of Lisiecki and Lisiecki (2002). Then the matched normalized data were interpolated at 100-year interval by polynomial interpolation method. The compiled TOC fluctuation in central Japan is well correspond to the D18O curves of the marine sediments (LR04) and the Greenland ice core (NGRIP) respectively both in the orbital and millennial time scales. In late MIS (marine isotope stage) 7 and MIS 1, the compiled TOC values are generally high. In MIS 6, 4 and 2, the TOC values are generally low, and their temporal fluctuation is not so large. The compiled TOC in MIS 5 is characterized by large fluctuation in orbital scale. In contrast, the compiled TOC in MIS 3 shows many peaks which correspond with the repetition of cold stadials and warm interstadials, known as D-O cycle. This result suggests that the normalized TOC may be a useful proxy of paleoclimate for the past 200 ka, which can be correlated with other sediments or climate records by the many marker tephra beds in central Japan.