

R004-09

D会場 : 11/25 PM2 (15:00-18:00)

17:15~17:30

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Effects of religious activities on magnetic properties of surface sediments in caldera lakes (Lakes Buyan and Tamblingan, Bali)

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For people who live on the island of Bali, Indonesia, lakes are sacred. Therefore, some religious places or temples (known locally as puras) where religious activities take place are on the lakes' shores. We studied the surface sediments of two caldera lakes in Bali, namely Lake Buyan and Lake Tamblingan, to identify the effects of religious activities. Both lakes are adjacent but not connected to each other. These are parts of the dormant Bratan Caldera. Lake Buyan is more exposed to human activities (settlements, agriculture, and tourism) compared to the more secluded Lake Tamblingan. Lake Tamblingan historically has more puras compared to Lake Buyan. Sediment samples were collected from various locations within the lakes and were analyzed using magnetic and geochemical methods. The results showed that the values of magnetic susceptibility are higher in places near Puras, especially in Lake Tamblingan. Concentrations of trace metals and REEs are also higher in the sediments of Lake Tamblingan compared to those of Lake Buyan, except for concentrations of SiO₂ and Gd. These findings, along with the presence of CuO and ZnO, which were not detected in the surrounding rocks, imply that the surface sediments of Lakes Buyan and Tamblingan recorded remnants associated with religious activities. The fact that the sediments of the secluded Lake Tamblingan are more magnetic and have higher concentrations of trace metals infers that religious activities might affect the quality of lake sediments.