

HQR010-P01

Room: Convention Hall

Time: May 26 17:15-18:45

The formative ages of dunes around Ghaggar basin, India relative to Indus civilization using Optically stimulated luminescence

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Ghaggar basin, where localized at Haryana and Rajasthan in the modern Indian territory are well known for dense distribution of Harappan and related sites. It has been thought that one of the causes of the Indus civilization collapse was the expansion of dune. However, it was found that dunes around Ghaggar basin had existed since before the period of the Indus civilization as results based on the fieldwork by Maemoku et al. (2009).

In this work, we would try to determination the formative ages of dunes around Ghaggar basin using optically stimulated luminescence (OSL) dating. OSL measurements were made using the quartz (ca. 100 micron) extracted from dune samples. Paleodoses were estimated by the single aliquot regenerative-dose (SAR) protocol. We think that OSL ages of dunes will contributes to discussion the relationship between the fluvial change of Ghaggar river and dunes.

Acknowledgement: This study was supported by the research project titled Environmental Change and the Indus Civilization (project 3-3) managed by Research Institute for Humanity and Nature, Japan.

Reference: Maemoku et al. (2009) Environmental change and the Indus civilization, 37-43. (in Japanese)

Keywords: OSL dating, Indus civilization, Ghaggar river, dune