
[EE] Evening Poster | H (Human Geosciences) | H-CG Complex & General

[H-CG25]Deltas and estuaries: multidisciplinary analyses of complex river-mouth systems

convener:Yoshiki Saito(Estuary Research Center, Shimane University), Kazuaki Hori(Department of Geography, Graduate School of Environmental Studies, Nagoya University), Guan-Hong Lee(共同), Qing He(State Key Laboratory of Estuarine and Coastal Research, East China Normal University)

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This session has foci on morphodynamics, material cycling, and sustainability for deltas and estuaries. We invites contributions that advance research on deltas and estuaries as complex river-mouth systems from modern and ancient examples, and develop integrated frameworks for delta & estuary dynamics modeling on various temporal and spatial scales from studies of coastal evolution over the Quaternary to small-scale sediment/material transport processes and also studies based on field observations, numerical simulation and flume studies, and also contributions that promote data collection and sharing for advancing science and local solutions, consider policy and governance issues linked to the sustainable development of deltas and estuaries, and use in-situ and satellite data for guiding modeling and risk assessment.

[HCG25-P03]Paleowater depth of the Kiso River delta around the Holocene transgression maximum

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Isochrons are commonly drawn in the stratigraphic cross section of deltas mainly based on radiocarbon ages. Additionally, widespread volcanic ash with a known eruption age is also very useful for drawing isochrons in the section. This study focuses on the Kikai Akahoya tephra (K-Ah) observed in sediments of the Kiso River delta and estimates paleowater depth off the paleo-Kiso River mouth around the Holocene transgression maximum. K-Ah is one of the most important tephra markers across Japan and is estimated to be 7165–7303 cal BP based on the analysis of Suigetsu SG06 core (Smith et al., 2013). The tephra has been also reported especially from the prodelta mud of the Kiso River delta (e.g., Makinouchi et al., 2001; Ogami et al., 2009; Nakanishi and Takemura, 2015). Mud content of borehole core sediment obtained along Kiso, Nagra, and Ibi rivers was determined by using the 0.063 mm sieve. The residue on the sieve was observed under a binocular stereomicroscope to check the presence (relative content) of the volcanic glass. The K-Ah could be detected relatively easily from samples with high mud content. In contrast, detection with low mud content samples was difficult. The K-Ah occurs at approximately 17 m below the present sea level at 35-36 km upstream from the Ibi River mouth and 30-35 m below near the Kiso River mouth. In addition, the depth of occurrence tends to be shallow near the terminal of alluvial fans formed by tributaries through the Yoro Mountain running the western edge of the delta. This result may contribute to the paleoenvironment reconstruction at the transition from the Holocene transgression to regression and to calculate sediment volume of the delta during the last 7.3 ka.