[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)
Mon. May 21, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)
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-P06]Sedimentology, stratigraphy and timescales of flood deposits in the Mekong River Delta.

*Catherine Burns[1,2], Yoshiki Saito[1] (1.Estuary Research Center, Shimane University , 2.University of Leeds, UK)
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Fluvial and deltaic floodplains are a vitally important area for human habitation, food production and as flora and faunal habitats. Floodplains can also act as temporary to longer-term stores of sediment resulting in a reduced sediment supply to the coastline. Over 650 million people worldwide were displaced by flooding between 1985-2014 /(Kocornik-Mina et al., 2015). As a consquence understanding the timescales and processes that cause river flooding is of critical importance, especially as human population continues to increase and climate change results in more variable and extreme weather. The Mekong in Cambodia has experienced frequent heavy floods throughout the Holocene to the present day resulting in the formation of extensive floodplains throughout its reaches and consquent associated deposits. Extensive research has been undertaken on the Mekong resulting in a good understanding of how the delta system has evolved since initiating in the early Holocene (Tamara et al., 2009). Intrachannel deposits accumulating and preserving through this evolution have been well-catalogued(e.g. Gugliotta et al., 2018)with less attention focussed on the floodplain deposits and how sediment is stored on the floodplain (Hori et al., 2007)
The aim of this study is to improve understanding of the timing and depositional processes of floodplain deposits in the Cambodian tract of the Mekong River. This will be achieved through the fulfilment of four research objectives: (i)detailed sedimentary-stratigraphic analysis of the characteristics and, if possible, preserved geomorphic form, of ancient flood deposits at several outcrop locations in the Mekong River Basin (Cambodia); (ii)age-dating of studied successions, using OSL dating, in order to quantify temporal frequency and preservation timescales of fluvial overbank successions in the study area; (iii)analysis of satellite data within the study area to constrain annual–decadal geomorphic change in the fluvial overbank area and ground truth these interpretations using core and outcrop (river terrace) data; (iv) linking the interpreted yearly–decadal hydrodynamic and planform geomorphic

changes to the longer timescale stratigraphic record and understand the preservation potential of flood events into the geological record.
This study provides information on natural functioning of floods of the Mekong: frequency and scales, and impacts on natural levees and floodplains. Constraining the timescales over which the geomorphological and sedimentary deposits within fluvio-deltaic overbank areas form, and exploring the applicability of modern analogues of river flood deposits to understanding ancient fluvial overbank successions, would be of use to a wide community of sedimentologists that study modern systems and ancient fluvial-deltaic depositional systems.