Geophysical Research Abstracts
Vol. 13, EGU2011-9082, 2011
EGU General Assembly 2011

A Holocene relative sea-level curve from Sub- and inter-tidal deposits of the Sunda Shelf and SE Vietnam

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Sea-level change is a central parameter in the climate system and its control on continental margin sedimentation requires a profound understanding of deglacial sea-level changes. The focus of recent debates on deglacial Melt-Water Pulses (MWPs) was initiated by new coral records from Tahiti that do not support a strong acceleration of sea-level rise of MWP 1B. Sub- and inter-tidal deposits of the broad and low-gradient Sunda Shelf and SE Vietnamese shelf allow tracking of deglacial coast-line migrations. We present a compilation of sub- and inter-tidal sediment records of the Sunda Shelf and the SE Vietnamese shelf that accurately follow the deglacial transgression. This compilation displays a relatively constant rate of sea-level rise of $\sim$10 mm/yr between 13 ka BP and 10 ka BP and shows no significant discontinuity during the MWP-1B period, which is in agreement with newly recovered coral records from Tahiti. However, the newly compiled record from SE Vietnamese shelf and the paleo-Mekong valley indicates a decreasing rate of sea-level rise of between 10.0 and 9.5 ka BP followed by a strong acceleration of sea-level rise of $\sim$40 mm/yr between 8.9 to 8.3 ka BP. This sea-level jump coincides with MWP-1C but has not been observed in the Tahiti and Barbados coral records. The acceleration of sea-level rise at this time explains the fast and extensive Holocene flooding the SE Vietnamese shelf reaching up to the Cambodian lowlands.