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Earth Surface Dynamics Discussions

Interactive comment on "SHORT COMMUNICATION: Massive Erosion in Monsoonal Central India Linked to Late Holocene Landcover Degradation" *by* Liviu Giosan et al.

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The short communication is based on the key aspect of landcover, soil and its erosion from two different zones of lithologies present in Godavari Drainage Basin (GDB) which is also previously discussed by Kulkarni et al. (2015) based on the mineral magnetic studies from Godavari sediments and Bay of Bengal sediments. Their study,based on the general increasing trend in ferrimagnetic concentration in middle Bay of Bengal sediments infer the dominance of Deccan source over quartzo-feldspahthic source for Late Holocene. They suggested the combine effect of distinct lithological units, geomorphic setup and spatial distribution of monsoonal rainfall plays an important role

in sediment generation in GDB. Previously Sangode et al. (2001) also suggested the dominance of Peninsular Source over Himalayan source in Bay of Bengal sediments. Kulkarni et al (2014) based on mineral magnetic study inferred the dominant Deccan basaltic source over the floodplains of Godavari River for entire stretch as a result of intense weathering of Deccan plateau.

Recently Cui et al. (2017) based on organic carbon and mineral magnetic analysis of well dated (AMS 14C) Godavari delta core 'CY' suggested the increasing Deccan basaltic source during Late Holocene particularly after ∼6 cal ka BP. Their study also show the significant increase in ferrimagnetic minerals from ∼3.2 to 3.1 cal. ka BP attested to severe decline in vegetation in Deccan plateau. Majority of CMZ is represented by Pranhita River basin rather than upper Godavari and the mixing may have a complex role in Godavari onwards is not considered. Besides this, the Bikshamaiah and Subramaniyan (1980) although given detail account on chemical and sediment mass transfer in GDB and established some controlling factors for same, they did not classify the geology of GDB as two major geological units. The part of Godavari River in the Godavari graben is flowing above the Gondwana and Purana sedimentary units which although accounts for about 11% of basin (Biksham and Subramaniyan, 1988) but acts as major lithounit in main channel as well as in Pranhita River (A major tributary of Godavari). Further CMZ is represented majorly by Pranhita River basin rather than Godavari and the mixing may have a complex role (Kulkarni et al 2015) in Godavari onwards is not considered.

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