

## Carbonate content of the turbidite in the Bengal Fan : a neogene record of the monsoon's strength?

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Because they correspond to an easily soluble lithology, carbonate weathering is very sensitive to climate change. The IODP Expedition 354 drilled the middle Bengal fan at 8°N and generated a record of Himalayan erosion going back to Late Oligocene. Based on isotopic fingerprint of the silicate fraction, turbiditic sediments have clear Himalayan origin. This record also revealed that the nature of the eroded formation remained remarkably constant throughout the Neogene, in agreement with the previous finding at the distal part of the fan cored by ODP Leg116. The turbidites' chemical composition showed virtually no differences with the modern Himalayan river sediments, with no significant variation through time. On the other hand, the shallower water depth at 8°N allowed the studying of carbonate content. Carbonate is persistent through the Neogene and appears to show a maximum of 8%–10% during the Middle Miocene. Stable ( $\delta^{13}\text{C}$  &  $\delta^{18}\text{O}$ ) and radiogenic isotopic compositions ( $^{87}\text{Sr}/^{86}\text{Sr}$ ) are quite variable and likely the result of a mixture of marine biogenic carbonate and terrestrial detrital carbonate. Unscrambling of the carbonate origin will be performed in order to confirm that the Middle Miocene corresponds to the lowest carbonate dissolution in Himalaya. If this is the case, that period should be characterized by a weaker monsoon.