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THE GEOLOGICAL SIGNIFICANCE OF COSMOGENIC NUCLIDES IN LARGE LOWLAND RIVER BASINS

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HIGHLIGHTS:

- Source-to-sink sediment fluxes from long-lived cosmogenic nuclides (*in situ* ¹⁰Be)
- Controls of Earth surface fluxes across river basins over kyr-long temporal scales
- Ganga and Amazon nuclide concentrations reflect their mean headwater erosion signals
- *In situ*- and meteoric-derived erosion in Amazon basin in good agreement

ABSTRACT

Measured from a bag of sand taken in large rivers, the concentration of cosmogenic nuclides such as *in situ*-produced ¹⁰Be, ²⁶Al, and ¹⁴C can be used to constrain the mean sediment flux of the headwaters and assess the duration of sediment storage

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