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Late Quaternary history of dust supply from the Huang He (Yellow River) floodplain as recorded in a loess-paleosol sequence from the Mangshan Plateau (China)

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The Mangshan Plateau is located on the south bank of the Huang He (Yellow River) just west of the city of Zhengzhou, well outside the Loess Plateau in central China. Mixing models of the grain-size data indicate that the loess deposits are mixtures of three loess components. Comparison of the mixing model with existing models established for a series of loess-paleosol sequences from the Loess Plateau (Vriend and Prins, 2005; Prins et al, 2007) indicate that the Mangshan loess has been supplied from a proximal dust source, the Huang He floodplain, during major dust outbreaks. The high accumulation rates, the composition of the loess components, and especially the high proportions of a sandy loess component support this. Due to the exceptionally high accumulation rates, the Mangshan grain size, magnetic susceptibility, carbonate, geochemical and stable-isotope records provide a high-resolution archive of environmental and climate change.

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