

## Dust trajectory changes over the Loess Plateau due to regional mountain uplift

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Eolian deposits over the Loess Plateau, which can be traced back to more than 20 million years ago, are important archive for the past environmental changes in the Asian continent. Understanding the sources and transportation of these eolian deposits provides valuable information on the evolution of the Asian monsoon system and the aridification of its interior.

The Asian mountain uplift, in particular the Tibetan uplift since the Cenozoic, is widely known to have exerted a profound impact on the Asian environment. But how it left footprints in the dust deposits over the Loess Plateau remains highly speculative. In this study, we employ the trajectory model (LAGRANTO) driven by the output from our regional model COSMO-CLM experiments with different Asian orography to explore how the growth of different regional mountains in Asia affects the potential dust transport pathways to the Loess Plateau. We select several localities over the Loess Plateau with well-preserved Red Clay and Loess sequence to perform backtrajectory calculation. The results are compared with the proxy records retrieved from these localities to see whether the changes in the dust transport pathways due to different mountain uplift may offer an explanation to the variation observed in the proxy records.

### References:

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