

Exploring sources of heavy metals in atmospheric aerosols in the southeast Tibetan Plateau

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As important components of atmospheric aerosols, heavy metals are of great concern because of their bioaccumulation potential and toxicity via inhalation and deposition.

Recently, researchers from the Northwest Institute of Eco-Environment and Resources of the Chinese Academy of Sciences (CAS) investigated the elemental composition and sources of total suspended particles (TSP) in the southeastern Tibetan Plateau, and determined the concentrations of total and acid-soluble elements.

Results were published in *Science of The Total Environment*.

The researchers found that the mean elemental concentrations at Yaze, a remote site in the southeastern Tibetan Plateau, were relatively low compared with those in other areas of the Tibetan Plateau, indicating that the [elemental composition](#) of TSP samples at Yaze may represent the background level of the southeastern Tibetan Plateau.

The enrichment factor values of some heavy metal elements at Yaze were slightly higher than those at Nam Co station (inland Tibetan Plateau) but much lower than those at Mt. Yulong, at Mt. Gongga (southeastern Tibetan Plateau) and megacity of Soute, which suggests weak influences at Yaze from anthropogenic activities.

The study also indicated that South and Southeast Asia were the main source regions for typical [heavy metals](#). Besides, [seasonal variations](#) in the studied elements were characterized by low and high concentrations during the monsoon and non-monsoon periods, respectively.

Concentrations of acid-soluble elements are usually used to study the sources of heavy metals in ice cores from the Tibetan Plateau. Therefore, the researchers determined the concentrations of total and acid-soluble elements simultaneously.

This study demonstrates the transport of heavy metals from external sources to remote sites in the southeastern Tibetan Plateau. It can also help to interpret the historical profiles of heavy metals in the ice cores of the Tibetan Plateau.

More information: Yinbo Xu et al, Composition and sources of heavy metals in aerosol at a remote site of Southeast Tibetan Plateau, China, *Science of The Total Environment* (2022). [DOI: 10.1016/j.scitotenv.2022.157308](#)

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