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## Three centuries of atmospheric Hg pollution recorded in Belukha glacier (Central Asia)

### Content

High-altitude glaciers preserve both global and regional emissions of atmospheric mercury. Here, we present a continuous high-resolution Hg record from the Belukha glacier in the Siberian Altai, covering the time period 1680–2001. The Hg concentration record reveals two distinct features; namely short-term maxima from mineral dust and volcanic events, and a long-term trend. The preindustrial time is characterized by low Hg concentrations and fluxes, comparable with values reported for remote areas such as Greenland, other sites in the Arctic and Antarctica. The early increase of the Hg levels in the first half of the 19th century is mainly related to emissions from metallurgical activities in Altai region. In the intermediate period since 1850 the regional contribution decreased and the global one increased. This was followed by a steep increase after the 1940s, culminating in a first maximum in the 1970s. Hg concentrations and fluxes in the industrial period are about three times higher compared to the preindustrial level. In the industrial period the ice core record reflects the influence of anthropogenic emissions from industrial mercury use in Europe and North America and recent emissions from coal burning and artisanal and small-scale gold mining (ASGM) in Asia. The obtained Hg results will be compared with other ice core records from Europe, North America, the Arctic, and Asia.

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