

## Climatic and environmental glaciochemical records from a climatic interaction region, East Antarctica over the past 780 years (1215-1996 AD)

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An 82.5-meter ice core was retrieved from marginal area of Dome A, East Antarctica by Chinese Antarctic Scientific Research Expedition in 1998/1999. Previous research shows that the area belongs to a continental-oceanic climatic interaction region.

Based on the ion chromatography analysis, we present the glaciochemical characteristics of the ice core in Antarctica over the past 780 years (1215-1996AD). Our results show that the climatic and environmental variability during 780 years in this area can be divided into three stages as follows:

Stage I is from 1215 to 1460AD, with a gradual decrease of the local annual snow accumulation rate and concentrations of most major ions.

Stage II is from 1460 to 1800AD, reaching the lowest accumulation rate and representing strong cooling. Concentrations of the major cations of Na<sup>+</sup>, Mg<sup>2+</sup> and the anion of Cl<sup>-</sup> in sea salt reduce distinctly, with the maximum drop in NO<sub>3</sub><sup>-</sup> and MSA, indicating the possibility to trace environmental changes by chemical ions. This period coincides with the Little Ice Age in Northern Hemisphere.

Since 1800, Stage III is characterized by a rapid increase of the annual accumulation and concentrations of the major cations and anions, implying the increase of local temperature, which is consistent with the global warming after the Industry Evolution.

It seems that in Antarctica, the global climatic and environmental variability is recorded in the climatic interaction region rather better than in the other regions.

### References

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## Mantle fluids involved in metallogenesis of the gold deposits in the hanging wall of Zhao-ping fault: Evidence of H-O isotopes

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The Jiaodong region is located on the eastern margin of the North China Craton and the western Circum-Pacific tectonic belt. It is bounded by the Wulian-Rongcheng fault and the Dabie-Sulu ultrahigh-pressure metamorphic belt in the southeast and the Tanlu fault in the west.

The Jiaodong region is the large cluster of gold mineralization in China. Zhao-Ye gold zone is one of the major gold mineralization zones in Jiaodong. There is many large and medium-sized gold deposits, such as Linglong gold deposit, Dayingezhuang gold deposit and Xiadian gold deposit et. But most of this gold deposits are located under Zhao-Ye gold zone. The gold deposits are located in the hanging wall of the Zhao-Ye gold zone have little people to study except Sun Zhongshi (Jilin University). At present, Lingqueshan gold deposit located in the hanging wall of the Zhao-Ye gold zone have put into production. It is advantage for studying on the material sources.

Fluids are distillation of Ore-forming, which origin, movement and matter uninstal reflect the whole process of ore forming. The composing of Ore-forming fluids is an important parameter to demonstrating geochemistry character of Ore-forming. The paper study on the geochemistry character of H-O isotopic of gold deposit located in the hanging wall of Zhao-Ye gold zone, in order to discussing the origin of fluids of ore forming.

Zhao-Ye gold zone is one of the major gold mineralization zones in Jiaodong. The gold deposits located in the hanging wall of the Zhao-Ye gold zone have little people to study, which occurs mainly in the Jiaodong rock group. The ores are mainly of the auriferous quartz vein type hosted in NE trending fractures and faults. Wall-rock alterations are most potassic alteration, siliconization, quartz-sericitization, pyritization and carbonatization. According to research of geological characteristics of deposit and analysis of fluid inclusion of quartz. The  $\delta^{18}O$  value of the quartz vein ranges from 4.78‰ to 10.12‰, and the average value is 6.22‰. The  $\delta D_{H_2O}$  values of inclusion fluid vary from -73.13‰ to -100.15‰, and the average value is -86.63‰. The research shows that this area mineralogenetic heat fluid is mainly curtain fountain, and participated in a certain degree of magma water and atmosphere water, has the same mineralogenetic heat fluid system with the other Zhao-ye gold deposit.