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Geochemical and isotopic composition of auriferous pyrite from the Yongxin gold deposit, Central Asian Orogenic Belt: Implication for ore genesis

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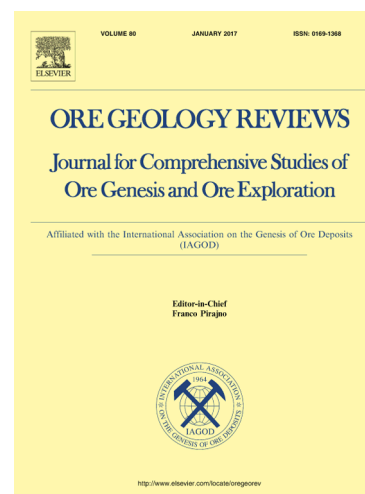
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**Geochemical and isotopic composition of auriferous pyrite  
from the Yongxin gold deposit, Central Asian Orogenic Belt:  
Implication for ore genesis**

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**Abstract:** The Yongxin gold deposit is a large, fracture-controlled ore deposit in the Duobaoshan gold-copper metallogenic belt within the eastern domain of the Central Asian Orogenic Belt (CAOB). Silicification, sericitization and potassic alteration are the main hydrothermal alteration types which display successive zoning surrounding the ore-bodies. Pyrite, galena, sphalerite and chalcopyrite are the major metallic minerals in the deposit, and gold is mainly distributed in pyrite. Here we investigate the trace element composition and isotope (Pb and S) characteristics of pyrite from this deposit. The auriferous pyrite is mainly allotriomorphic and homogeneous in chemistry with a homogenous distribution of As, Ni, Mo and Fe from the core to rim of grains. These features are consistent with the  $^{207}\text{Pb}/^{206}\text{Pb}$ - $^{206}\text{Pb}/^{204}\text{Pb}$ , and  $^{208}\text{Pb}/^{204}\text{Pb}$ - $^{206}\text{Pb}/^{204}\text{Pb}$  of the grains that suggest a single source with no evidence for involvement of late fluids. The  $\delta^{34}\text{S}$

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