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九瑞矿集区燕山期构造-岩浆作用及其与铜金多金属成矿关系研究

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摘要:

九瑞地区是长江中下游成矿带中最重要的铜金多金属矿集区,成矿作用可分为海西期喷流沉积期及燕山期岩浆热液期,其中燕山期的构造-岩浆热事件对成矿至关重要。本文在详细的野外矿田构造-地层-岩浆岩调查与分析及室内成岩成矿机理研究基础上,对九瑞矿集区构造系统、岩浆系统和成矿系统进行了综合研究。梳理厘定出该区主要控岩成矿断裂构造为NEE(近EW)向脆韧性走向叠掩逆冲断裂带和SN(近N)向张扭性横向破碎断裂带。两组断裂形成“井”字形的构造格架,制约着该区的岩浆岩分布并与成矿密切相关。区内岩浆岩种类繁多,成矿有关的主要是花岗闪长斑岩和石英闪长玢岩。两类岩体侵位的时期都集中在燕山早中期(138~148Ma)。其产状一般为岩株、岩锥、岩枝和岩墙等。岩枝、岩墙多沿NEE向逆冲断层带,尤其是沿其特有的“Y”字形断裂分布。而与成矿关系最为密切的岩株、岩锥则都侵位NEE向和SN向断裂的交汇处。本文特别强调前人关注不够的SN(近SN)向张裂带及其控岩成矿作用。在本区确定的4组SN向张扭性带中其中第2组宋家湾-严家村一线同NEE断裂带的几处交汇处是值得进一步详查的预测区。九瑞矿集区矿床成因类型主要包括矽卡岩型、斑岩型(包括隐爆角砾岩型)、沉积-热液叠加改造型和热液脉型等。在不同矿区,各种不同成因类型的矿床可以叠加复合为不同的矿床式,如①山式(沉积-热液叠加改造型+矽卡岩型矿化);②丰山洞式(矽卡岩型+隐爆角砾岩型矿化);③城门山式(斑岩型+矽卡岩型+沉积-热液叠加改造型矿化);④洋鸡山式(隐爆角砾岩型+斑岩型矿化)。

英文摘要:

Jiurui is one of the most important Cu-Au ore district in the Lower-Middle Yangtze Valley metallogenic belt in China. There are generally two ore-forming stages in this belt, one is the Hercynian syn-sedimentary hydrothermal mineralization stage (mainly Fe-S) and the second stage is the Yanshanian magmatic-hydrothermal stage (mainly Cu-Au-Ni). Based on investigations and studies on regional structures, magmatic rocks, and various types of mineralization in the Jiurui district, we summarized the main features of structure, magmatism and mineralization in the Jiurui district here are two main fault structures in the district that controlled the magmatic emplacement and related mineralization, namely, the strike over step thrust zones with NEE (near EW) direction and brittle-ductile character, and the transverse fracture fault zones with SN (near SN) direction and tension-torsion character. These two groups of the faults constitute a tectonic framework in the region which looks like a Chinese word "well", and they controlled the magmatic rocks and related mineralization. There are various types of magmatic rocks in this district, with the main types of granodiorite porphyry and quartz diorite-porphyry. These rocks were emplaced during the Early-Middle Yanshanian stage 138~148Ma. These rocks display various shapes, including apophysis, harpolith, sheet, dyke, and stock. The igneous sheets and dykes are distributed along the thrust zones with NEE direction. In particular, they appear along a fault structure with a special "Y" shape structure. But the stocks were emplaced at the cross place between the NEE direction and SN direction fault, and these rocks have a close relation with the mineralization. In this paper, we emphasize the SN direction tension faults and their controls on emplacement of granitic porphyry and related mineralization. We have identified four groups of fault with the SN direction of tension-torsion character in this district. We suggest that it is worth to pay more attention to the cross places between the Songjiawan-Yanjiacun line and the NEE faults for more detailed exploration. The major mineralization types in the Jiurui district include skarn type, porphyry type (including

crypto-explosive breccia type), the superimposed stratabound type, and hydrothermal vein type. In a particular ore deposit, it may be a combination of various types of mineralization. For example, the Wushan deposit is a combination of skarn and superimposed stratabound ores, the Chengmenshan ore deposit is a combination of skarn, porphyry and superimposed stratabound ores.

关键词：[断裂构造](#) [断层相关褶皱](#) [构造-岩浆带](#) [叠加复合成矿](#) [九瑞矿集区](#)