福建紫金山矿田中生代岩浆岩演化序列研究

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中文摘要:福建紫金山矿田中生代岩浆活动分为晚侏罗世和早白垩世二幕, 第一幕为晚侏罗世(154~149 Ma)挤压环境下的岩浆活动, 表现为壳源S型花岗岩紫金山复式岩体与才溪岩体的侵位, 复式岩体具有154 Ma、 150 Ma及149 Ma三次脉动; 才溪岩体侵位时代约150 Ma。第二幕发生于早白垩世(125~93 Ma)构造拉张、地幔上涌的环境, 岩浆活动共4期, 形成一套I型花岗岩及共源异相的火山岩、次火山岩, 为成矿提供了物源和热源。其中第1期为早白垩世火山喷发与岩浆超浅层就位, 形成石帽山群下段的英安岩及紫金山次火山岩(125~118 Ma); 第2期表现为石帽山群下段安山岩喷发与四方岩体的侵位以及英安玢岩的形成(109~ 103 Ma); 第3期表现为石帽山群下段英安岩的喷发和罗卜岭—紫金山似斑状花岗闪长(斑)岩的侵位以及龙江亭、二庙沟附近的石英闪长玢岩的形成(103~100 Ma); 第4期表现为晚期罗卜岭斑岩的侵位、石帽山群上段流纹岩的喷发和大岩里花岗斑岩岩脉、金铜矿的石英斑岩脉等成矿后期无矿脉岩的形成(100~93 Ma)。晚侏罗世、早白垩世两个岩浆系统各自形成共源岩浆异地异相分异演化的格局。

中文关键词:紫金山矿田 岩浆岩演化 同位素年代学 中生代

The Evolution Series of Mesozoic Magmatic Rocks in the Zijinshan Orefield, Fujian Province

Abstract:The Mesozoic magmatic activities of the Zijinshan orefield included Late Jurassic and Early Cretaceous Episodes. The first episode of magmatic activity occurred in Late Jurassic(154~149 Ma)in a compression environment, characterized by the intrusion of Zijinshan composite granite body and Caixi pluton of S-type granite. The Zijinshan composite granite body has 3 pulsations, which occurred in 154 Ma, 150 Ma and 149 Ma. Caixi pluton intrusion occurred around 150 Ma. The magmatic activity of the second episode was composed of four stages during 125~93 Ma in Early Cretaceous in a tension and mantle upwelling environment, forming a series of I-type granites and their cogenetic heterophase volcanic rocks and subvolcanic rocks and providing metallogenic material and heat. The volcanic eruption and super-hypabyssal magmatic intrusion of the first stage finds expression in the formation of dacite of the Lower Member in Shimaoshan Group and the Zijinshan subvolcanic rocks (125~118 Ma). The volcanic eruption and intrusion of the second stage are characterized by the andesite eruption of Shimaoshan Group and Sifang pluton intrusion as well as the formation of dacite porphyrite (109~103 Ma). The volcanic eruption and intrusion of the third stage are characterized by the dacite eruption as well as the porphyraceous granodioritic porphyry intrusion in Luoboling-Zijinshan together with the formation of quartz dioritic porphyrite near Longjiangting and Ermiaogou(103~100 Ma). The volcanic eruption and intrusion of the fourth stage are characterized by the intrusion of Luoboling prophyry, the eruption of rhyolite in the upper member of Shimaoshan Group and the intrusion of barren vein rocks after the ore-forming period (e.g., Dayanli granite porphyry dykes, quartz porphyry dykes in Zijinshan gold-copper ore deposit)(100~93 Ma). The Late Jurassic and the Early Cretaceous co-magmas respectively differentiated and evolved into varied facies in different areas.

keywords:Zijinshan orefield magmatic evolution isotopic geochronology Mesozoic

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