

The Electrical Resistivity Signature of a Fault Controlling Gold Mineralization and the Implications for Mesozoic Mineralization: a Case Study from the Jiaojia Fault, Eastern China

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A b s t r a c t

We use 3D audio magnetotelluric method to the south segment of Jiaojia fault belt, and obtain the 3D electrical model of this area. Regional geophysical data were combined in an analysis of strata and major structural distribution in the study area, and included the southern segment of the Jiaojia fault zone transformed into two fault assemblages. Together with the previous studies of the ore-controlling action of the Jiaojia fault belt and deposit characteristics, the two faults are considered to be favorable metallogenic provinces, because some important features coupled with them, such as the subordinate fault intersection zone and several fault assemblages in one fault zone. It was also suggested the control action of later fault with reversed downthrows to the ore distribution. These studies have enabled us to predict the presence of two likely

target regions of mineralization, and are prospecting breakthrough in the southern section of Jiaojia in the Shandong Peninsula, China.

Key words: Jiaojia fault belt, audio magnetotelluric sounding, 3D inversion, 3D electrical structure, relationship to mineralization.

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