

Research on Protolith and Tectonic Setting of Tashenkuergan Group Metamorphic Rocks in Tatulugou Area, Xinjiang Autonomous Region, China

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Abstract: Geotectonically, Tatulugou area is in Tashenkuergan-Tianshuihai landmass of Qiangtang-Sanjiang orogenic belt, and Tashenkuergan group is Proterozoic basement. The group is mainly composed of a series of metamorphic rocks, which were metamorphised through high green-schist—low amphibolite facies metamorphic series by regional metamorphism with uncertainty on protolith and tectonic setting. Research results of the characteristics of petrology and rock geochemistry of this sequence of rocks indicate that its protolith is a series of common sedimentary fragments rock construction with basic-Intermediate-acid volcanics with a little carbonatite. The tectonic environment of Tashenkuergan group is continental rift, back arc basin and stable continental margin ocean basin of extension environment. These analytical results reflect the tectonic setting of continental splitting, the formation and extension of oceanic crust, which is helpful for the further study on crust evolution of this area.

Keywords: metamorphic rocks; protolith; tectonic setting; Tashenkuergan Group; Tatulugou