



# Structural Evolution Features of Lannigou Carlin-style Gold Deposit in Southwest Guizhou, China: Seismic Evidence

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**Abstract:** The Lannigou gold deposit is located in Zhenfeng county, Guizhou province, and it is the largest gold deposit which has been known in “Golden Triangle” of SW Guizhou, so it has important economic value (Chen et al., 2007b). The tectonic location of the Lannigou gold deposit belongs to the southwest margin of the Yangtze block and the north side of the Nanpanjiang basin (Luo, 1993), and the main tectonic line is NE and NW. This study combines the surface tectonic phenomena with the seismic data, relies on the seismic data results and takes the tectonic evolution as the axis. Based on the analysis of the surface structures, it can be known that compressive structures,

extensional structures and strike-slip structures are developed in the study area, but the main structural style is compressive structures (Fig. 1a). It can be seen from the seismic interpretation profiles that although some faults are thrust faults at the surface, they are normal faults in the seismic interpretation profile and form the “Y” shape (Fig. 1b). It can be seen from the combination of surface tectonic phenomena and seismic interpretation profiles: the deep and shallow structures are not consistent, but relevant. This article suggests that the study area has experienced two different tectonic evolutions since late Paleozoic to Mesozoic. Among them, late Paleozoic-middle

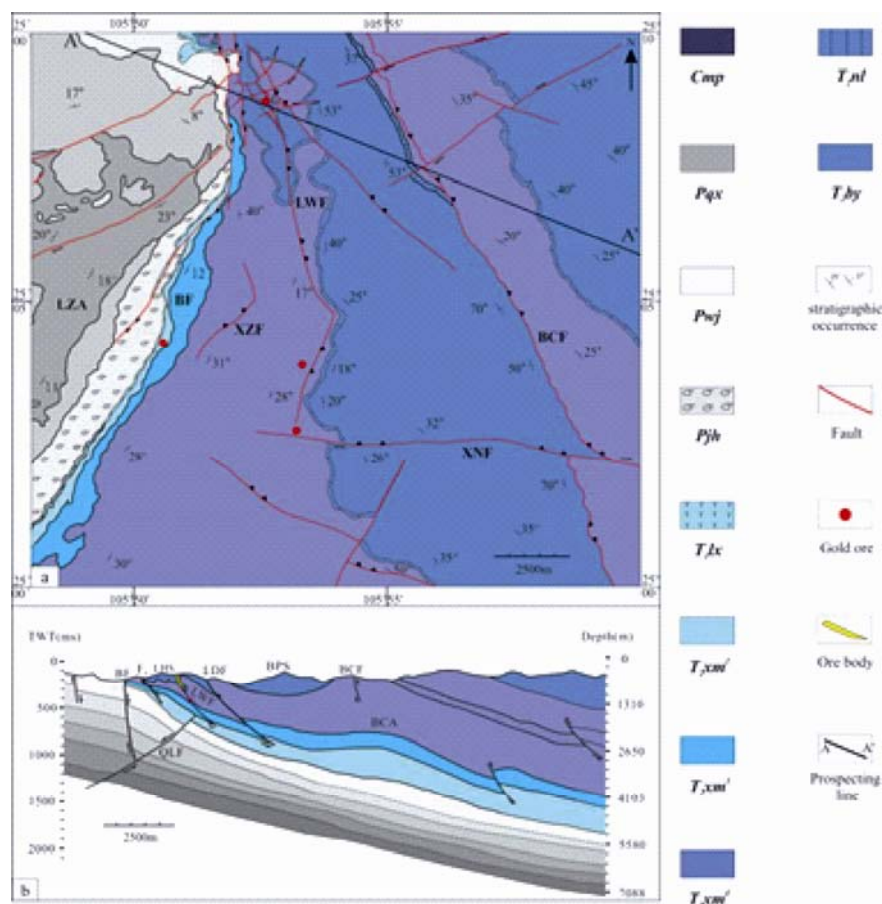


Fig. 1. Regional geological maps and seismic interpretation profiles of the Lannigou gold deposit.

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Triassic early anisian is extensional stage, while the middle anisian and later is compressive stage. Volcanic zircon U-Pb was used to determine the age of volcanic rocks at 248 Ma of the  $T_2xm^2$  by the predecessors (Maria, et al., 2006), we concluded that the tectonic reverse time should be later than 248Ma.

**Key words:** structural evolution, seismic evidence, Lannigou gold deposit, SW Guizhou

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