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Structure of the Baimarang massif from the Xigaze ophiolite, Yarlung Zangbo Suture Zone, Tibet, China

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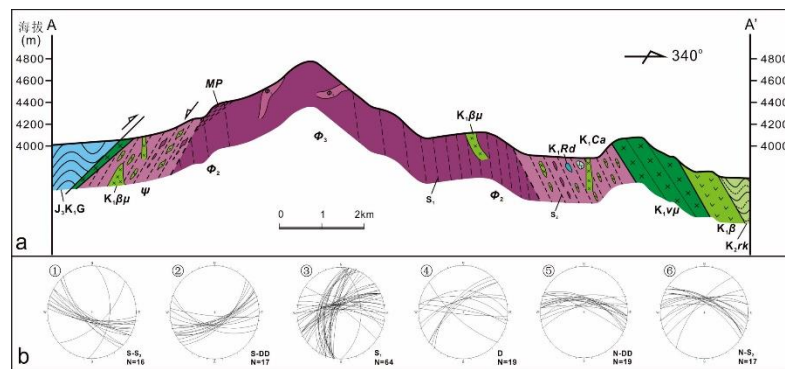
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Mantle peridotites are predominated over the mafic rocks and the mafic rocks emplaced ca. 130~120Ma with a limited temporal interval, are the marks that divide the Yarlung Zangbo ophiolite from the classic ophiolite, such as Oman ophiolite. This study choosed well-reserved massif, named Baimarang, in the Xigaze ophiolite in the middle section of Yarlung Zangbo Sutue Zone, carried out the detailed mapping to provide key constrains on the setting of the Xigaze ophiolite.

The studies carried on the structures of the Baimarang massif indicate that the massif has a domal shape (Fig.1) different from the classic ophiolite. The core of the "ophiolite dome" is composed of the deformed fresh harzburgites. The mantle of the dome is dominated by the mylonitic sperpentinites



invaded by dolerite intrusive. The marge of the massif is dolerite intrusive and lava flows. Based on the rock assemblages and fabrics, we propose that the Baimarang massif may be an oceanic core complex occurred in a slow-spreading mid-ocean ridge or a forearc basin. The mylonitic sperpentinites constitute the

detachment fault. The LA-ICP-MS dating of the syntectonic deformed dolerite in the detachment fault yielded a magmatic age of 124.4±1.9Ma, suggesting this age represents the time of detachment activity.

Fig.1 The cross-section of the Baimarang massif in the Xigaze ophiolite

(J₃K₁G-Gaxue group; K₁βμ-dolerite intrusive; Ψ-mylonitic sperpentinite; Φ₁-dunite; Φ₂-fresh harzburgite; Φ₃-Iherzolite; K₁Ca-carbonatite; K₁Rd-rodingite; K₁νμ-dolerite; K₁β-basalt; K₁rk-Upper Cretaceous Xigaze

flysch; MP-mylonitic peridotites; S-S₂-foliation of the mylonitic serpentinite at the south of the fresh harzburgite; S-DD-syntectonic deformed dolerites in the detachment fault at the south of the fresh harzburgite; S₁-foliation of the fresh harzburgite; D-undeformed dolerite in the fresh harzburgite; N-DD-deformed dolerites in detachment fault at the north of the fresh harzburgite; N-S₂-foliation of the mylonitic serpentinites at the north of the fresh harzburgite).

