

## Geochronology of the volcanic rocks from the Luobusha Conglomerates in Tibet and their implications

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Luobusha conglomerates crop along the east end of The Yarlung Tsangpo suture zone (nearly, Zedong County), interbedded with acidic volcanic rocks (Thickness of 15M) at the bottom of the conglomerates, and the similar stratigraphic units, Kailas Formation, Qiuwu Formation and Dazhuqu Formation crop along the whole Yarlung Tsangpo suture zone from west to east.

We reported the age of the felsic tuff interbedded with the luobusha conglomerates in the western of Zedong County for the first time. Zircon LA-ICP-MS U-Pb analysis shows that the acidic volcanic rocks was formed at  $18.66 \pm 0.22$  Ma ago, consequently, It is inferred that the time of the initial deposition of Luobusha conglomerates was about 20 Ma, combined the zircon LA-ICP-MS U-Pb age of granite underlying the Luobusha conglomerates is  $29.90 \pm 0.36$  Ma. The existence of the volcanic rocks documents a volcanic activity developed at  $18.66 \pm 0.22$  Ma ago, together with volcanic rocks in the Kailas Formation and Dazhuqu Formation aged ~24 Ma (Decelles, P. et al., 2011) and 24.1-19 Ma (Aitchison, C. J. et al., 2000) respectively, a volcanic activity developed all along Yarlung Tsangpo suture zone and moved from west to east, meaning the 're-activation' of the suture zone, which is remarkably similar to the potassic – ultrapotassic volcanism caused by the movement of deep material along Gangdese zone in time and space (MO X.X, 2010).

Making further efforts, we inferred that under the area of Zedong County, the east end of The Yarlung Tsangpo suture zone, the deep material motion and the 're-activation' of the suture zone led the deep material up to the surface, and this volcanic activity hint that the evolution of the Tibetan Plateau transformed from Plates interactions into intraplate lithosphere interactions.

### References

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