

Accepted Manuscript

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PII: S0024-4937(17)30088-9
DOI: doi:[10.1016/j.lithos.2017.03.002](https://doi.org/10.1016/j.lithos.2017.03.002)
Reference: LITHOS 4251

To appear in: *LITHOS*

Received date: 27 August 2016
Accepted date: 2 March 2017



Please cite this article as: Shao, Fengli, Niu, Yaoling, Liu, Yi, Chen, Shuo, Kong, Juanjuan, Duan, Meng, Petrogenesis of Triassic granitoids in the East Kunlun Orogenic Belt, northern Tibetan Plateau and their tectonic implications, *LITHOS* (2017), doi:[10.1016/j.lithos.2017.03.002](https://doi.org/10.1016/j.lithos.2017.03.002)

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Petrogenesis of Triassic granitoids in the East Kunlun Orogenic Belt, northern Tibetan Plateau and their tectonic implications

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Abstract

The East Kunlun Orogenic Belt (EKOB), an important part of the Greater Tibetan Plateau, is an ideal region for understanding the tectonic evolution of the Anyemaqen Ocean. Here, we present zircon U-Pb ages, bulk-rock major and trace element analyses and Sr-Nd-Hf isotope compositions on representative samples of the syn-collisional Dulan batholith at the eastern end of the EKOB. The zircon U-Pb age data indicate that the bulk of the Dulan batholith was emplaced at 240-235 Ma. The granitoids have high- to medium-K and metaluminous characteristics. They are enriched in large ion lithophile elements (LILEs) and light rare earth elements (LREEs) and depleted in some high field strength elements (HFSEs, e.g., Nb and Ta), while having a flat heavy REE (HREEs) pattern. The mafic magmatic enclaves

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