The Tibet lithosphere is not all hot

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We calculated the thermal lithosphere structure of Tibet and adjacent regions based on the new thermal isostasy method. Moho depth is constrained by the published receiver function results. The calculated surface heat flow in the surrounded Tarim, North China, and Yangtze cratons have a good match with the real measurements of surface heat flow. We recognize the northern Tibet anomaly where has a relatively thin lithosphere with a thermal thickness of <80 km and surface heat flow of >80 - 100 mW/m\textsuperscript{2} may cause by the removal of lithospheric mantle and upwelling of asthenosphere. In Lhasa Block, the cold and thick lithosphere (>200 km) with a surface heat flow of 40 - 50 mW/m\textsuperscript{2}. In the east Tibet, the heterogeneous thermal lithosphere does not follow the widely spread large scale strike-slip faults and suggested that the faults do not cut down to the lithosphere. The surrounding cratons have different thermal lithosphere features. The Tarim and Yangtze cratons show typical cold and thick lithosphere with a lithosphere of >200km and surface heat flow of <50 mW/m\textsuperscript{2}. The western North China Craton has an intermated lithosphere with a thickness of 120-200km and surface heat flow of 45-60 mW/m\textsuperscript{2}. Our result suggested that high and flat Tibet has different isostatic compensation in different blocks. The heterogeneous lithosphere thermal structure of the Tibet suggested that the uplife force drive are difference in Tibet.