LA-ICP-MS chronological study of Tongka gneissic granite in Northern Gangdise, Qinghai-Tibet Plateau

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The Tongka gneissic granite, which locates in Jiayuqiao Block in the northern margin of Gangdise, intruded to the high-amphibolite facies metamorphic rocks of Kaqiong Rock Group of Meso-Neoproterozoic and developed intensive plastic deformation with band fabrics and crumpled texture. The CL imagines of the zircons from Tongka gneissic granite show that the zircons well developed oscillatory zoning core and dark growth rim. Two discordant lines can be obtained by LA-ICP-MS in-situ zircon U-Pb isotopic analysis (Fig. 1). The upper intercept age of the oscillatory zoning cores is (549±18)Ma (MSWD=0.02, Points=23), with the ^{207}Pb-^{235}U weighted average age, (550±10)Ma (MSWD=0.03). However, the dark growth rims yield an upper intercept age (416±23)Ma (MSWD=0.001, Points=8), and the ^{207}Pb-^{235}U weighted average age is (416±20)Ma (MSWD=0.001). The ratios of Th/U of the cores (0.39~1.59) are generally higher that of the rims (0.32~1.29), which proves that the age (549±18)Ma represents the crystallization time of the gneissic granite, equivalent to the time of Pan-Africa Movement (600-500Ma), and the age (416±20)Ma represents the time of an intensive tectonic-thermal event in late Caledonian. This study further confirmed that the Jiayuqiao block in the northern margin of Gangdise is Pan-African basement.

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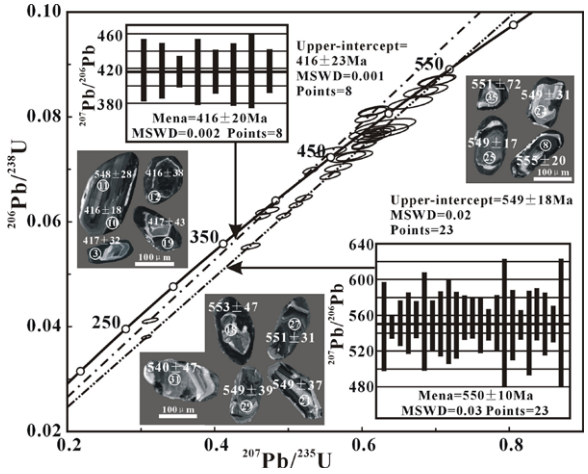

Figure 1: U-Pb concordia diagrams and CL images

Global constraints on biogenic particles

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The biosphere is a source of particles and their precursors to the global atmosphere, yet the magnitude and drivers of these emissions are poorly understood. Two key classes of biogenic particles are primary biological aerosol particles (PBAP) and secondary organic aerosol (SOA) from biogenic volatile organic compounds (VOCs). In this presentation I will discuss modeling efforts and field observations of PBAP, (with a focus on fungal spores) and SOA (including biogenic VOC precursors), highlighting challenges and recent progress.