

论文

青藏高原拉萨地块早中生代高压变质作用及大地构造意义

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摘要:

在西藏拉萨地块的东部,从松多到加兴,在晚古生代石英岩和碳酸岩地层中分布着一条近东西走向的榴辉岩带。尽管受到不同程度的海水蚀变和后期流体/岩浆渗滤的影响,多数松多榴辉岩保存了类似于N MORB的微量元素地球化学特征,这也与榴辉岩的Sr Nd同位素系统特征一致。这些榴辉岩经历了压力约为2.6 GPa、温度约为650 °C的高压变质作用。石榴石-绿辉石-全岩Sm-Nd等时线给出(239±3.5) Ma的等时线年龄,表明在早中生代,拉萨地块内部至少发生过一期洋壳俯冲事件。以松多榴辉岩为代表的洋壳俯冲事件同时表明带状基墨里大陆的形成有可能是一系列微陆块碰撞拼贴而成。

关键词: [西藏](#); [拉萨地块](#); [榴辉岩](#); [高压变质作用](#); [俯冲作用](#)

Early Mesozoic high pressure metamorphism within the Lhasa Block, Tibet and its implications for regional tectonics.

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Abstract:

The nearly east-west trending Sumdo-Jiaying eclogite belt, ~200 km east of Lhasa, occurs within the traditional Late Paleozoic quartzite and carbonate units of the Lhasa block. This belt provides information that constrains how the Cimmerian subcontinent was assembled. The major and trace element data of bulk rock indicate that these eclogites have preserved an N-MORB type geochemistry, which is also in consistency with their Sr-Nd isotopic systematics. The *p-T* estimations show that they experienced high pressure metamorphism at ~2.6 GPa and ~650 °C. Garnet-omphacite-whole rock Sm-Nd isochron yields an age of (239.0±3.5) Ma. This age represents the timing of the high pressure metamorphism that led to the formation of the Sumdo eclogite. These data show that the Sumdo-Jiaying oceanic block was subducted to a depth of ~75 km and underwent high pressure metamorphism at ~239 Ma. Such an early Mesozoic event of subduction of oceanic crust within the Lhasa Block suggests that (1) at least one oceanic basin existed concurrently with the Paleotethys and (2) the Cimmerian subcontinent was assembled by a number of smaller continental or oceanic blocks that were scattered within the Paleotethyan Ocean.

Keywords:

[Tibet](#); [Lhasa Block](#); [eclogite](#); [high pressure metamorphism](#); [subduction](#)

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