



学术报告

Himalayan Leucogranites: Nature and Impact on Mountain Building

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Roberto Weinberg 教授是国际知名构造地质学家，美国地球物理学会会士。他长期专注于岩浆分离与运移、岩浆混染/混合与斑岩型铜矿床、大陆伸展作用等方面的研究，在澳大利亚西南部的 Yilgarn 地体、阿根廷安第斯山脉和喜马拉雅山南麓的构造演化方面取得显著研究成果。在 *Geology*, *EPSL*, *Tectonics*, *GSAB* 等国际重要刊物上发表论文 100 余篇。

报告内容简介

Widespread anatexis was a regional response to the evolution of the Himalayan-Tibetan Orogen that occurred some 30 m.yr. after collision between Asia and India. This talk reviews the nature, timing, duration and conditions of anatexis and leucogranite formation, comparing the Greater Himalayan Sequence (GHS), and the Karakoram mountains. Himalayan leucogranites and migmatites generally share a number of features, such as similar timing and duration of magmatism, common source rocks and clockwise P-T paths. Despite these common aspects, most papers emphasize how anatectic rocks in different regions deviate from this general pattern, indicating a fine-tuned local response to the dominant driving forces. The impact of melting on the evolution of the Himalayas has been widely debated. The weakening of the crust due to melting has been used to support channel flow models for extrusion of the GHS from underneath Tibet, or alternatively, to suggest it triggered a change in the critical taper of the front or a combination. In view of the wide variety of timing of anatexis and activation of the STD, it is plausible that anatexis had only a second-order effect in modulating strain distribution in the Himalayas, with little effect on the general arc shape of the orogen. The arc shape was maintained because forward movement was fundamentally controlled by the imposed convergence history rather than local responses.