

## **MIDDLE EOCENE Ar/Ar AGES OF PHENGITE IN UHP METAMORPHIC ROCKS FROM PIEMONTE ZONE, WESTERN ALPS: SINGLE GRAIN DATING BY LASER STEP HEATING**

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The Piemonte zone consists of lithologies of the Tethyan oceanic lithosphere which have suffered blueschist facies and UHP metamorphism. Their Ar/Ar phengite dating may make it possible to reveal the cooling history or exhumation timing of UHP rock. We collected 8 different colored rocks from an out crop by Lake Cignana in Zermatt-Saas zone. The rocks collected are classified into five types: Ca-rich schists, coesite-bearing pelitic schists, Mn-rich quartzite and basic schist. They have different mineral assemblage but should have experienced the same P-T-t history for the UHP metamorphism and the subsequent exhumation. EPMA analyses show that Ca-rich schists have some range of Si values (3.2-3.4 pfu) of phengite while others have insignificant variation. A technique of single grain laser step heating is applied to Ar/Ar dating of phengites. The Ca-rich schists show some disturbed age spectra but plateau ages were defined well in the higher temperature fractions, giving  $39.7 \pm 0.7$  and  $41.6 \pm 0.4$  Ma. The coesite-bearing pelitic schist has a plateau age of  $41.4 \pm 2.5$  Ma which occupies more than 95% of total argon. No plateau age was obtained from the Mn-rich quartzite. Thus about 40 Ma plateau ages obtained from the Ca-rich and the coesite bearing schists make a constraint on cooling age or exhumation timing of the UHP metamorphic rocks though the schists have experienced some secondary event probably the Lepontine greenschist facies metamorphism.