

## **Tertiary pegmatites of the Central Alps**

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The largest field of Alpine pegmatite dikes outcrops in the Central Alps within the Southern Steep Belt (SSB) of the Alpine nappes and extends for about 100 km in an E-W direction and 15 km in a N-S direction north of the Periadriatic Fault, from the Bergell pluton (to the east) to the Ossola valley (to the west). Though the regional extension of the pegmatite field of the Central Alps has been outlined (Wenk, 1970; Burri et al., 2005), and there are many studies dealing with specific and local aspects of these pegmatites, an attempt to integrate the geochemistry, mineralogy, and field textural and structural features of pegmatites over a regional scale is still missing.

There are many advantages of studying pegmatites in the Central Alps:

- (i) pegmatite emplacement can be dated (e.g. U-Pb and Th-Pb on zircon, monazite and xenotime) and their overprinting relationships with the deformation structures of the Alpine nappe pile as well their orientation can place constraints on the tectonic and geological history of the Alpine domain;
- (ii) the relatively well-known geological setting of the Alpine chain can help in constraining the environmental conditions of pegmatites formation which is often a major unknown.

As tectonic markers, the different sets of pegmatites of the Central Alps potentially potentially record the dynamic evolution of the Alpine chain during the stages following the Adria-Africa collision and the successive thermal re-equilibration of the pile of metamorphic nappes. The extension of the pegmatite field over a large area which encompasses different tectonic and magmatic units, (exposed over sections of thousands meters) allows the influence of the host rock and level of structural emplacement on the mineral and textural characters of the pegmatite dykes to be investigated. This study will involve field work and lab characterization of deformed rock samples with integrated methodologies (SEM, EBSD, CL, OC, EMPA, TEM, SIMS, image analysis). Dating of pegmatites with different radiometric methods (especially U-Pb and Th-Pb on monazite) will be an additional major focus of the study.