

**Swiss Tectonic Studies Group Excursion 2025**  
**12-14<sup>th</sup> of September**

**Multistage exhumation of subducted continental lithosphere - The Sesia Zone, Lower Val d'Aosta and Val Chiusella - Preliminary program subject to change**

**Theme:**

The lower Aosta and Chiusella Valleys (Italy) expose a tract of the Sesia Zone containing the oldest subducted and exhumed remains of the distal margin of the Adriatic Plate. The fabrics and mineral assemblages preserve a record of subduction (D1, D2) following by multistage exhumation involving three further phases of deformation: Oblique extensional exhumation under retrograde blueschist-to-greenschist facies conditions (D3, Chiusella Shear Zone), top-SE normal shearing and folding under greenschist-facies conditions (D4, Ometta Shear Zone) followed by top-SE backfolding (D5, Vanzone). We will visit outcrops where the latter three phases overprint the classical lithological units of the Sesia Zone (Eclogitic Micaschists, EMS; Gneiss Minuti, GM; Secunda Zona Dioritico-Kinzigitica, IIZDK). This trip is an opportunity to continue last year's discussion on how UHP/HP rocks are exhumed.

**Day 1: Friday 12 September, lower Val d' Aosta**

Meeting point at 14.00h: car park at **Quincinetto**. People coming by car from Switzerland will reach this stop most easily through the Grand Saint-Bernard Tunnel and Aosta.

Program: The first outcrop at **Quincinetto** is a classical locality for fresh eclogite-facies mineral assemblages and foliations related to subduction of the Adriatic continental margin in Late Cretaceous time. At the second outcrop (**Monstrutto Quarry**), we'll see fabrics that overprint these HP fabrics, including greenschist-facies ultramylonite and -cataclasite. The ultra-fine quartz grain size in these overprinting fabrics have been interpreted as recording high-stress seismic events, but are as yet difficult to relate to any of the three exhumational phases outlined above.

Overnight in Albergo Ristorante Miniere - Traversella (TO) - P.IVA 04927070013

Tel. 0125/749005 - Email [albergominiere@albergominiere.com](mailto:albergominiere@albergominiere.com),  
<http://www.albergominiere.com/>

**Day 2 : Saturday 13 September, Val Traversella**

Program: A full day of hiking along and beside the stream bed in a south-to-north transect of the central Sesia Zone will be devoted to the transitions and overprinting relations between subductional and exhumational fabrics: (1) Stream boulders with eclogite-facies assemblages and composite S1/2 foliation of the EMS, (2) Steepening of this composite foliation which locally contains an older foliation in F1 folds and garnet ; (3) Steep zone in the EMS with S1/S2 deformed by open-close F2 and F3 folds; (4) Subvertical D3 Chiusella Shear Zone with relics of D2 blueschist-facies mylonite and overprinting greenschist-facies mylonite (streambed just S of Alpe Pasquere); (4) Tertiary Andesitic dyke truncates composite S2/3 foliation.

An attempt will be made to place these fabrics and transitions in a regional tectonic context which is, of course, open for discussion.

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### **Day 3: Sunday, 14. September, Val d' Aosta**

Program: We will leave the Val Traversella, pass the Oligocene Traversella syenitic intrusive body and drive NW-ward up the Val d'Aosta. This is the classical transect of the Sesia Zone, but is anomalous for its large rock- and landslides: Stops: (1) Road from **Bard to Forta di Bard** to see "Gneiss Minuti" in the greenschist-f. part of D3 Chiusella Shear Zone; (2) Entrance to **Val Champorche** to view greenschist-facies mylonite deformed by open D5 "Vanzone" backfolds. From there, we'll also view the E side of Val d'Aosta where the dip of the main foliation changes from SE- to NW-dipping; (3) The climbing school just S of **Arnad** exposes the front of Sesia Zone on the E side of Val d'Aosta. There, we'll see two generations of greenschist-facies folds in Gneiss Minuti (Bard Unit). A late crenulation is possibly related to D4 "Ometta" Shearing; (4) Just S of **Echalod Inferiore** at the front of Sesia Zone on W side of Val d'Aosta, we'll see 1-2 phases of isoclinal folding deformed by D5 "Vanzone" backfolds.

We'll see how far we get on this day. The field trip will end with a summary of fabric relations in the Sesia Zone in light of our observations. The field trip will **end no later than 16.00**.

**Field trip leader:** Mark Handy ([mark.handy@fu-berlin.de](mailto:mark.handy@fu-berlin.de))

#### **Cost:**

Half-pension Albergo Ristorante Miniere – Traversella, **costs per room type:**

Single room (incl breakfast) = 60 euro

Double room (incl breakfast) = 110 euro

Triple room (incl breakfast) = 135 euro

Dinner in Albergo Ristorante Miniere – Traversella will cost per person per night 35 euro.

Accommodation and dinner can be paid **in cash** on the spot. Please bring your own lunches for all days.

**Maximum number of participants:** 25 people. When the maximum number of participants is reached, please note that members of the Swiss Geological Society will be given priority.

**To book your participation on the excursion:** please send an e-mail to Vénice Akker [ismayvenice.akker@unipd.it](mailto:ismayvenice.akker@unipd.it) **by the 1<sup>st</sup> of June 2025**. Please note that registration is binding. In case you have a preference for a room type and/or any dietary wishes please indicate.

**See you on September 12!**

