

## **THE MONT BLANC (MB) POP-UP: RESULT OF EXHUMATION OF A MID-CRUSTAL SHEAR ZONE**

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Along the transect through the MB massif from the Chamonix suture to the Helvetic roots, a remarkable change in the style of deformation is documented, and attributed to the same tectonic process, i.e. the Alpine compression and extrusion. The profile across the MB massif is interpreted as a 15 km wide pop-up structure, striking NNE-SSW, with the main direction of frontal thrusting towards NW and inferior backthrusting towards SE. Maximum strain in the crystalline basement is localised on the contact between the Internal MB massif and its metamorphic mantle, which is overridden by the Angle fault zone of mylonites and ultramylonites, up to 1 km wide and dipping to SE. The cataclastic shear zones dip preferably to NW and in the central part of the Val Ferret, the SE border of the granitic body is backthrust over the Liassic shales. The cataclasites indicate that the deformation took place at a shallow crustal level. The ultramylonites of the Angle fault are interpreted to form originally a thrust flat at a mid crustal level, whilst the stress in the hanging-wall, ca. 10-15 km above the level of ultramylonites, produced cataclastic shear zones in the MB granite. The transect may then be interpreted as a tilted crystalline block and exhumed ductile shear zone: ongoing thrusting finally raised the ultramylonites to the present-day steep position on the frontal ramp. Owing to this rotation of this crustal block, the brittle structures are found at the same horizontal level as the coeval ultramylonites and C-S structures.