The exhumation of the Mont Blanc massif: new structural data

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The geometry and kinematics of Neogene exhumation of the Mont Blanc massif and its evolution in time are still controversial, with a wide range of possible models proposed. Most of these models are based on thermochronological data and there is a lack of detailed regional structural information, especially with regard to the deformation history in the immediately adjacent cover. This study presents new field-observations and preliminary results from the first field summer of a PhD project and considers the different models and their compatibility with these structural observations. In particular, we try to estimate the importance of dextral transpressional movements during the uplift of Mont Blanc and its probable link with the Simplon-Rhone fault zone, in order to check a 2D pop-up model against a more 3D dextral transpressive model, developing a positive flower structure. Furthermore, we aim to more precisely constrain the timing of exhumation with respect to localized brittle and more distributed ductile deformation, using Ar-Ar dating of synkinematically grown white-mica and, if possible, calcite growth in slickenfibres and calcite veins.