Strain analysis of syn-tectonic Late Variscan MME and host tonalites (Serre Batholith, Italy) by means of field- and UAV-survey

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This study focuses on syn-tectonic tonalites (c. 300 Ma) outcropping in the south-western part of the Serre Batholith (southern Italy) near the Palmi village (N 38°21'51"; E 15°50'18"). We used the shape of mafic microgranular enclaves (MME) hosted into tonalites to reconstruct the stress field orientation at the time of pluton emplacement. This strain analyses has been also coupled with the main orientation of felsic dykes, which sharply crosscut MME, collected by means of both field- and UAV-survey (drone model DJI-Mavic-2Pro). The reconstruction of a 3D virtual outcrop model (Agisoft Metashape software) permitted us establishing the spatial orientation of strain markers (MME and dykes). On this basis, we reconstructed a maximum stress oriented N5°/25° (dip direction/dip) at the time of MME injection, which can be correlated to the activity of a late-Variscan shear zone in the crystalline basement of Calabria roughly E-W oriented in the currently geographic coordinates. Our findings contribute to a better reconstruction of late-Variscan tectonic framework in the Mediterranean realm characterized by a complex network of crustal scale shear zones.

Mots-Clés : Shear-zone, MME, syn-tectonic pluton emplacement, UAV-survey, 3D digital outcrop model, tonalite

Merci de ne rien inscrire dans cette zone et ne pas modifier les marges des pieds de page et entêtes.