

Kinematic of shear zones from central Burkina Faso (West Africa) using anisotropy of magnetic susceptibility and microstructures

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In the Palaeoproterozoic terranes of west Africa, the great lineaments are always considered as transcurrent faults. The present study is focused on these transcurrent faults over three areas of Burkina Faso (Kaya, Ouagadougou and Pô) with a total surface around 36300 km². These terranes are mainly composed of low grade metamorphic rocks also call greenstones, a first generation of granitoids with TTG affinity and a second generation of granitoids (calc-alkaline granites, alkali-granites and syenites). Using magnetic fabrics from anisotropy of magnetic susceptibility (AMS) measurements on granitoids, the following main conclusions can be drawn. The orientations of the AMS fabrics and microstructures allow to distinguish:

- Transcurrent shear zones in the strict sense,
- Transpressional shear zones and,
- Shear zones with predominant flattening.

Examination of microstructures show that along some of the shear zones, rocks acquire their fabrics at solid state (high or low temperature). This observation shows that these rocks were emplaced before or during the shearing. The other rocks which display a magmatic fabric were probably emplaced after the shearing. In these conditions, microstructures constitute an excellent criteria for relative chronology.

Keywords: lineament, transcurrent shear zone, fabric, AMS, microstructure