



The Sefwi-Comoé belt Ghana/Ivory Coast : a major crustal shear zone ?

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The Palaeoproterozoic Sefwi-Comoé region that straddles Ghana and the Ivory Coast in West Africa has been characterised as resulting from a combination of compression and simple shear during late synkinematic leucogranite intrusion. The analysis of regional geophysical datasets allows us to better define the geometry of the major lithostratigraphic packages and their structural contacts in this region. This analysis reveals a series of well defined leucogranites intrusions enveloped by high strain zones.

Recent finite element modelling of two-phase aggregates has shown that we can analyse the geometry of these systems both in terms of their finite deformation and their mechanical contrast. We interpret the geometries we see in the Sefwi-Comoé region as reflecting the activity of a major crustal deformation zone which was dominated by simple shear. The comparison with the modelling suggests a finite shear strain of approximately 5 gamma, which in turn implies a lateral displacement of 400 km across the belt. Our analysis suggests that the leucogranites were already acting as more rigid bodies during the (dextral?) shearing, suggesting that their emplacement was predominantly pre-kinematic, and which has implications for their potential subsequent remobilization by gravitational forces.