Abstract submission form

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Session title *Please indicate your preference, see website for session numbers and titles*	Session 12: The Brittle-Ductile record of earthquakes
Title	Paleostress analysis of the brittle deformation in the Kinsevere Copper Deposit, DRC.
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Abstract
Maximum 500 words

The Kinsevere mine is a copper deposit located in the Democratic Republic of Congo (DRC), within the Central African Copperbelt. This area is part of the Katangan basin within the SE portion of the Lufilian Arc, which is a large, arcuate structure that extends from SE Angola, across southern DRC, and into NW Zambia. The aim of the study was to characterize the relationship between palaeostress, faulting and folding in the Kinsevere area , in order to compare with the existing regional tectonic hypotheses . . This study also attempts to characterize fracture-controlled copper mineralization within the geodynamic context of the area.

The Right Dihedral method (Angelier and Mechler, 1977) was used to analyze slickensided faults, mineralized and un-mineralized joints, and shear fractures in the Kinsevere area. These structural data indicate that the paleostress associated with formation of the brittle structures occurred as several deformation phases : (1) a compressional stress regime which occurred during the early stage characterized by brittle structures (D_1 Kolwezian phase), (2) a strike-slip stress regime that resulted from a clockwise rotation of the earlier (D_1) compressional regime, and (3) a reactivation regime that occurred during the whole Monwezian phase (D_2) as shown by two fault-slip vectors observed on the strike-slip fault planes. The final structural event was characterized by the development of an extensional stress regime. This was associated with north – south oriented extension and it is related to the East African Rift System (D_3). The results support the previous studies by Unrug (1983) and Kampunzu and Cailteux (1999), especially the early compressional regime and the SE-wards escape tectonic by sinistral strike-slip faulting in the eastern part of the arc. This last occurred during successive episodes of indentation of the Kalahari craton into the Congo craton (fig.1).

References

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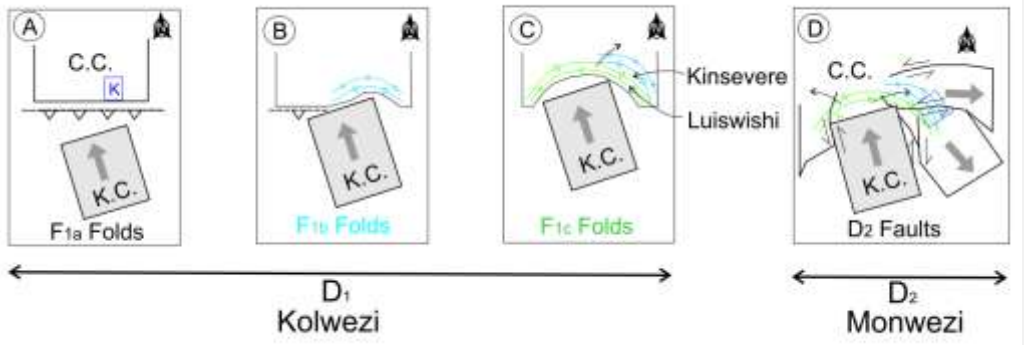

Figure caption

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Figure 1. Indentor model of the Lufilian arc showing the indentation of the Kalahari craton into the Congo craton (modified after Kampunzu and Cailteux, 1999).

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