

## 2 PURPOSE OF THIS STUDY

The purpose of this study is twofold. *Firstly*, to provide a geological framework for the CZ based on published data that can be used to evaluate the ongoing controversy regarding the timing of the “Limpopo Orogeny”. *Secondly*, to present new age, metamorphic and structural data in support of two major tectono-metamorphic events that affected the CZ in the late-Archaean and in the Paleoproterozoic. The new data, for the first time, allow the correlation of major fold types (cross- and sheath folds) with specific events, and show that peak metamorphism, accompanied by wide-spread anatexis can be tied to (the major fabric-forming event) that developed in the late-Archaean. The high-grade Paleoproterozoic event accompanied by minor anatexis, on the other hand, is mainly expressed by the formation of large cross folds and major strike-slip shear zones. Associated granitic magmatism at ~ 2000 Ma is restricted to the extreme western margin of the CZ in Botswana.

The new data to be discussed include the following: *Firstly*, structural mapping and a petrographic study of Singelele-type quartzo-feldspathic gneisses involved in the formation of a major sheath fold (the Avoca sheath fold in the area west of Alldays, Roering et al., 1992). New zircon SHRIMP age data on two distinct varieties of Singelele Gneiss will be presented, namely a penetratively deformed gneissic variety (S>>L) from the rim of the structure, and a more homogeneous but lineated variety (L>>S) from near the core of the structure. *Secondly*, new structural data as well as zircon SHRIMP age data and Pb-Pb single phase data on garnet from well studied metapelitic gneisses from the Baklykraal cross fold, located 20 km east of the Avoca sheath fold (Van Reenen et al., in press), will be presented. *Thirdly*, based on the published geochronological database, and the new age, structural and metamorphic data, the ongoing controversy concerning the nature of the late-Archaean and Paleoproterozoic events will be addressed. The important role and significance of late-Archaean granitic magmatism in the geologic evolution of the CZ will also be highlighted.