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Geochemical characterisation of the mafic/ultramafic rocks from the BARB-3 drilling site in the Barberton Greenstone belt

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The Barberton greenstone belt represents the oldest part of the Kaapval craton in South Africa. The ICDP Barberton Greenstone Belt Drilling Project (BARB) has aimed to sample complete and preserved field sections of rocks and sediments from the greenstone belt in order to study in detail the Archean conditions and processes at the surface of the Earth. Four cores have been recovered in the greenstone belt. The present study focuses on the mafic/ultramafic rocks from the BARB-3 drilling site.

The BARB-3 drilling site is located in a sedimentary section at buck reef. This drilling is mainly composed of sedimentary cherts intercalated with mafic and ultramafic layers. The first goal of our study will be to characterize those igneous intrusions in order to bring more constraints on their geodynamical setting. Because the ultramafic sills intercalate the sedimentary sequences, the characterisation and dating of those rocks will allow (i) better understanding the interactions between the oceanic volcanic crust and the hydrosphere and biosphere, and (ii) placing time constrain on the sedimentary sequences.

We will present preliminary results concerning major and trace element data on the BARB-3 mafic/ultramafic rocks.

