

**Whole rock and Sr, Nd and Pb  
isotope geochemistry of  
metasedimentary rocks from the  
Kaoko Belt, Namibia: tectonic  
implications**

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The metavolcanosedimentary Kaoko Belt comprises three tectono-stratigraphic domains of Neoproterozoic age in northwestern Namibia. Here we present new whole rock geochemical and isotope data obtained on metasedimentary cover rocks and their corresponding basement units collected along an E-W section covering the three domains of the belt. Based on the geochemical and isotope data a clear distinction can be made between two types of basement: (i) the Kamanjab-type basement, consisting of orthogneisses with little fractionation, slightly negative Eu anomalies, and  $Nd_{(TDM)}$  model ages of 2900-2300Ma, and (ii) the Marien fluss orthogneisses, whose characteristics indicate intensely deformed intraplate granitoids with higher concentration of REE and strong fractionation, marked negative Eu anomaly and younger  $Nd_{(TDM)}$  model ages of 2200– 1600Ma. These characteristics of the Marien fluss orthogneiss are distinctly different to those known from the Angola Block, traditionally assigned to the Congo Craton. The supracrustal rocks in all three domains show  $Nd_{(TDM)}$  model ages from 1950 to 1500Ma with the younger ages dominating. Similarly, this marked difference between isotopic composition of supracrustal rocks and basement is also visible in the  $\epsilon Nd$  vs  $\epsilon Sr$  diagram calculated for 580Ma. The predominantly Mesoproterozoic Nd model ages indicate the predominance of a source other than the Kamanjab-type basement, suggesting that despite the close spatial relationship between the Kaoko Belt and the southwest edge of the cratonic Angola Block, the latter could not have been the principal source of sediments in any of the belt's domains. The data obtained reinforce previous suggestions that place the Ediacaran depositional environment of the Kaoko sediments in a back-arc position relative to the Neoproterozoic magmatic arc of the Dom Feliciano Belt and its continuation into the westernmost Kaoko Belt, the Coastal Terrane along the Skeleton Coast.