# Hf-in-zircon perspective on crustal growth and recycling in the Arabian-Nubian Shield

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The Arabian-Nubian Shield (ANS) is a collage of Neoproterozoic (850-750 Ma) island arcs that were accreted together and then squeezed again towards 640 Ma in relation to Gondwana assembly. Arcs accretion was followed by a widespread, late-post kinematic, calc-alkaline igneous activity that culminated at ~ 630-600 Ma, and by subordinate alkaline magmatism. Isotopic evidence, mostly Sr and Nd, indicate that the ANS was formed as juvenile crust during the Neoproterozoic. The northern tip of the ANS is exposed in southern Israel (Elat area) where it displays ca. 200 m.y of crustal evolution via igneous activity and dynamo-thermal metamorphism. We analyzed zircon U-Pb and Lu-Hf isotope data from 5 representative rock units of the Elat association whose age spans the entire crustal history in the region. All calculated Epsilon Hf values are positive, and define a linear array when plotted versus age. Intersect of this line with the DM evolution line suggests crustal extraction at ca. 1000 Ma. This demonstrates that although the ANS as a whole is rightly considered juvenile, most of its Neoproterozoic evolution is characterized by crustal recycling and or differentiation processes. Detrital zircons from the Elat schist representing the oldest island arc material show a considerable spread over more than 8 Epsilon units, from the DM evolution line down towards CHUR values. This spread highlights the possible contribution from an additional source, beside the DM, to the island arc magmas. This additional source could either be an enriched mantle or a slightly older, ca. 1100-1200 Ma, juvenile crust.