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### **ACCEPTED MANUSCRIPT**

Hydrogen isotope fractionation of leaf wax *n*-alkanes in southern African soils

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#### ABSTRACT

The hydrogen isotope composition of plant leaf wax ( $\delta D_{wax}$ ) has been found to record the isotope composition of precipitation ( $\delta D_p$ ). Hence,  $\delta D_{wax}$  is increasingly used for palaeohydrological reconstruction.  $\delta D_{wax}$  is, however, also affected by secondary factors, such as vegetation type, evapotranspiration and environmental conditions, complicating its direct application as a quantitative palaeohydrological proxy. Here, we present  $\delta D_{wax}$ data from soils along vegetation gradients and climatic transects in southern Africa to

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