Geophysical Research Abstracts
Vol. 17, EGU2015-7925, 2015
EGU General Assembly 2015

Potassium as a key modulator of tropical woody vegetation structure and function

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Sampling a range of tropical vegetation types across Africa, Australia and South America we find – other things being equal – lower soil and plant potassium concentrations in savanna as opposed to forest species. There is also a trend- similarly observed in cross-continental comparisons, for foliar [K] to increase with declining precipitation. Moreover, when considered in a multivariate context with mean annual precipitation and soil plant available water storage capacity as covariates, soil exchangeable K turns to be an excellent predictor of stand-level canopy areas across vegetation types, providing drastically improved predictions as compared to models considering just precipitation or soil water storage potential alone This underlying basis of an important role for potassium as a modulator of tropical vegetation structure and function will be considered in terms of its role in plant water relations as well as in relation to recent key findings implicating potassium to have an important role in many root-shoot signalling pathways.