Abstract

Approximate Entropy (ApEn), a model-independent statistics to quantify serial irregularities, was used to evaluate changes in sap flow temporal dynamics of two tropical species of trees subjected to water deficit. Water deficit induced a decrease in sap flow of G. ulmifolia, whereas C. legalis held stable their sap flow levels. Slight increases in time series complexity were observed in both species under drought condition. This study showed that ApEn could be used as a helpful tool to assess slight changes in temporal dynamics of physiological data, and to uncover some patterns of plant physiological responses to environmental stimuli.

Keywords

Approximate Entropy; complexity; sap flow; time series analysis; tropical ecophysiology; water deficit.