



DendrometeR: analyzing the pulse of trees in R

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We present an R package named dendrometeR to analyze "the pulse of trees": stem cycles recorded by high-resolution dendrometers. The package dendrometeR facilitates data preparation (i.e. importing and gap filling) as well as the analysis of dendrometer series using a stem-cycle approach. In this approach, dendrometer series are separated into cyclic phases of contraction, expansion and stem radius increment in order to extract information on tree water-use and xylem growth. A segmentation function developed for environmental datasets, that calculates statistics for the respective phases and cycles (e.g. mean temperature or precipitation sums), allows to assess the meteorological forcing of stem-size variations.

The functionality of the package is illustrated on dendrometer data from Canada and Germany. All functions of dendrometeR are designed with entry-level users of R in mind, and come with extensive help pages.