

## Publication

### Number of growth days and not length of the growth period determines radial stem growth of temperate trees

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Radial stem growth dynamics at seasonal resolution are essential to understand how forests respond to climate change. We studied daily radial growth of 160 individuals of seven temperate tree species at 47 sites across Switzerland over 8 years. Growth of all species peaked in the early part of the growth season and commenced shortly before the summer solstice, but with species-specific seasonal patterns. Day length set a window of opportunity for radial growth. Within this window, the probability of daily growth was constrained particularly by air and soil moisture, resulting in intermittent growth to occur only on 29 to 77 days (30% to 80%) within the growth period. The number of days with growth largely determined annual growth, whereas the growth period length contributed less. We call for accounting for these non-linear intra-annual and species-specific growth dynamics in tree and forest models to reduce uncertainties in predictions under climate change.

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