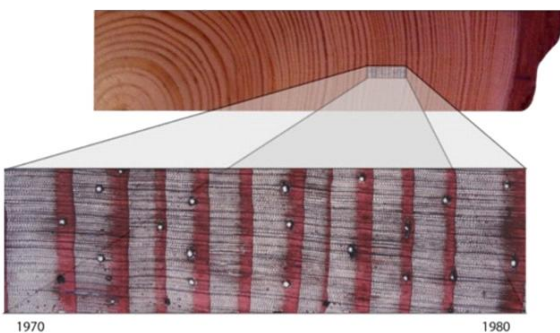
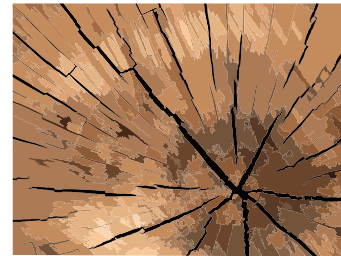


## Carbon variation through dendroecological proxies (A1-S-21471, CB2017-2018)



Given the perspective of predicted environmental variations, the carbon cycle plays an crucial role in terrestrial ecosystems. For example, forests have been documented to contribute 80% of total terrestrial carbon annually. A previous project (CB/2013/222522) demonstrated that there are substantial variations between trees and components, depending on the environmental context in which the tree develops. Carbon concentrations were determined for nearly 200 species from an unprecedented ecological wide-scale sampling program in Mexico (see <http://www.sisef.it/iforest/contents/?id=ifor2421-010>). However, at global level, uncertainty remains concerning the spatial-temporal dynamics associated with climate change. There is therefore a need for higher resolution indicators to elucidate the effect of climatic anomalies on interannual carbon variations. In this proposal, we assume that the inclusion of *dendroecological proxies*, such as ring width, early and late wood widths, intra-annual variations in density and wood density data, significantly improves our knowledge regarding the dynamics of carbon storage rates. Adopting a dendroecological approach, associated with allometric techniques that have proven reliable in other developed countries, this project studies carbon variation in species with dendroecological potential distributed across the megadiverse Mexican forest territory. This study is pioneering in Mexico and is of



worldwide scientific relevance, promoting and facilitating cooperation among diverse research groups (see: <https://dendroed.ujed.mx/>) and contributing to the training of high-level specialists through original and frontier knowledge. The knowledge and scientific bases generated have implications for forest productivity, carbon cycling and sensitivity thresholds of species to climate.

