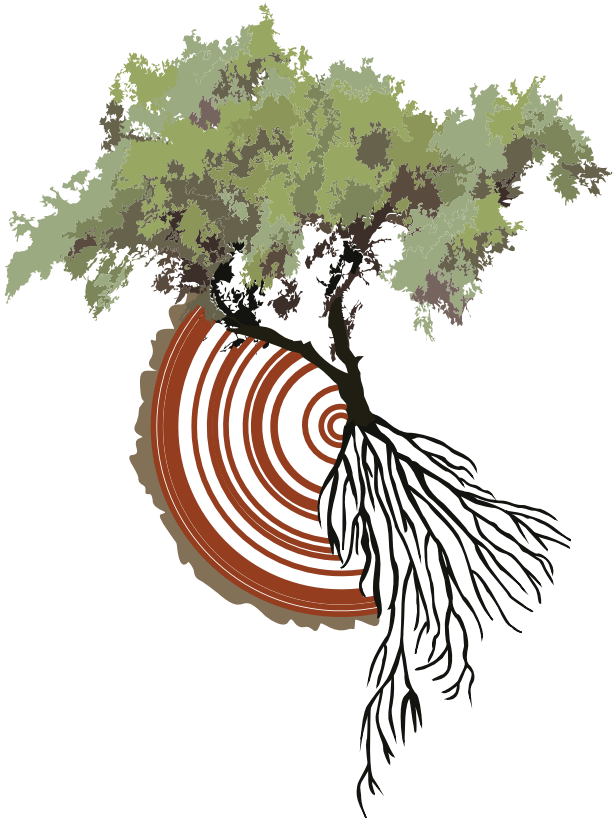
# AMERIDENDRO 2016

# Third American Dendrochronology Conference

Monday March 28 - Friday April 1, 2016, Mendoza, Argentina



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chronologies were built and the data was correlated with temperature and rainfall. Samples were collected from 74 trees in two areas, São Bento do Sul (SB) and Campo Alegre (CA); with an increment borer that was 5 mm in diameter. The samples were air dried and polished. The tree rings were counted, measured with the software Image ProPlus, crossdated with program COFECHA and the time series were used to produce chronologies with program ARSTAN. The age of trees varied from (19) 38 (65) years in SB and (34) 62 (123) years in CA. The average increase was (0.03) 3.86 (16.46) (±2.16) mm in SB and (0.08) 2.56 (12.79) (± 1.67) mm in CA. The synchronization from a total of 50 trees from both areas (SB+CA) resulted in an average intercorrelation of 0.306 and sensitivity of 0.316. The correlation with meteorological variables indicated that wood increment of *A. angustifolia* from the northern Santa Catarina Plateau is inversely proportional to the average temperature in winter and spring of the current year, before and during the growth phase, and directly proportional to the average rainfall in the summer before the growth phase.

## Tree rings of *Cedrela fissilis* Vell. in areas of dense ombrophilous forest in Santa Catarina, Brazil

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*Dendroecology: ECO-P-12 - Main Hall*

The concern for conservation of the environment promotes the need for information about the autoecology of native species that can be used for revegetation. Despite the importance of southern Brazilian forests as biodiversity reserves, these areas are threatened due to intense and extensive exploitation. Based on this, the objective of the present work was to study the tree rings of *Cedrela fissilis* Vell. (Meliaceae) from remnants of dense ombrophilous forest in the municipality of Blumenau, Santa Catarina, Brazil. Data collection was made from October 2011 to March 2012. Four radial samples (cores) were collected from 43 trees selected from the following three areas: Parque Natural Municipal São Francisco de Assis (PNMSFA); Reserva Particular do Patrimônio Natural Bugerkopf (RPPNB) and Campus I of the Universidade Regional de Blumenau (FURB). The samples were polished and the tree rings were marked, measured, submitted to quality control using the program COFECHA, and subsequently standardized using the program ARSTAN. The time period evaluated was from 1948 to 2011 and the satisfactorily crossdated trees had a critical correlation of 0.412 and average sensitivity of 0.503. The study of *C. fissilis* confirmed the potential of this species for dendrochronological studies, showing a common signal among populations in Blumenau.

## Dendrochronological potential of *Copaifera lucens* DWYER (Fabaceae): endemic species of a hotspot in the Atlantic Forest of Brazil

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*Tropical Dendrochronology: TRO-P-03 - Main Hall*

A challenge to the development of tropical dendrochronology is still recognized among the great floristic diversity, species form annual rings of growth. *Copaifera lucens* DWYER is an endemic species of the Atlantic Forest Concessions FAT; one of the most biodiverse vegetation types of the Atlantic Forest biome, in a climate seasonality of precipitation. This study aims to determine the dendrochronological potential of this species under the hypothesis that form layers of growth, following an annual rate as a result of seasonality. Wood samples from 26 adults in FAT areas in the Natural Reserve of Vale do Rio Doce (18 to 19 S) were collected with an increase of auger (Ø 5 mm). The samples were polished and inspected under stereomicroscopy for anatomical assessment and primary dating of tree rings. The width of these rings was assessed with the aid of Velmex® station. The cross-dating of the samples is being conducted to determine if there annually these structures and their relationship to regional climate. Were inspected so far 13 specimens. All showed growth layers bounded by marginal axial parenchyma bands often associated with secretory canals. Among those, the number of layers varied from 93 to 263. Based on the primary dating of samples, there is low timing rings in series within or between trees. However, for a specimen, adjustments in the initial dating resulted in an average correlation r = 0.6 for a period of 77 years between three series. The presence of discontinuous and/or false rings can hinder the proper delimitation of possible annual layers. However, although preliminary, the results demonstrate that the species has potential for the development of a long-time chronology for tropical forests. This chronology can contribute to the understanding of autoecology the species and add knowledge to areas of FAT, where there is little information derived from this science.

## Dendrogeomorphic dating and reconstruction of lahars on the most active volcanoes of Mexico

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