

RRfromCR.r

PREDICT REAL RADIUS FROM CALCULATED RADIUS

Description

This function allows the user to predict the value of a radius based on the calculation of an estimated radius with the method described by Dufraisse et al. (submitted).

Usage

```
RRfromCR(CR, taxon=NA, carb=FALSE, path= tk_choose.files(caption = "Select the models file"))
```

Arguments

CR

Value(s) of the calculate radius/radii in cm. If several values are to be computed, *CR* has to be a vector with the radii values.

taxon

Name of the taxon, the current version of the function allows only one taxon for each function call, even if several radii are provided.

carb

Logical argument specifying if the sample has been carbonized (TRUE) or not (FALSE).

path

path to the file "Models_RR_CR.rds" that contains the models for the taxa : *Pinus halepensis*, *Fagus sylvatica*, *Quercus sessiliflora*, *Fraxinus*, *Ulmus*, *Prunus avium*, *Castanea sativa*. Only *Pinus halepensis*, *Fagus sylvatica* have models for carbonized samples. If no path is provided, a window opens to select the file.

Details

If no taxon name is provided, the function uses a general model fitted with the whole training set from Dufraisse et al. (submitted).

Values

The function returns a data frame with the

- value(s) of the calculated radius/radii (*CR*)
- value(s) of the predicted real radius/radii (*RR fit*)
- ± 0.95 quantiles (*Pred Int 95% lwr*, *Pred Int 95% upr*).

A plot is generated with the appropriate model and the projections of the radius/radii.

References

Dufraisse A., Bardin J., Picornell-Gelabert Ll., Coubray S., Garcia-Martinez M.S., Lemoine M., Vila Moreiras S. (submitted). Pith location tool and wood diameter estimation: validity and limits tested on seven taxa to approach the length of the missing radius on archaeological wood and charcoal fragments. *Journal of Archaeological Sciences Reports*.

Dufraisse A., S. Coubray, O. Girardclos, N. Nocus, M. Lemoine, J.-L. Dupouey, D. Marguerie (2018). Anthraco-typology as a key approach to past firewood exploitation and woodland management reconstructions. Dendrological reference dataset modelling with dendro-anthracological tools. *Quaternary International*, Vol. 463, Part B: 232-249