

Package ‘treetop’

March 8, 2023

Type Package

Title A Shiny-Based Application for Extracting Forest Information from LiDAR Data

Version 0.0.5

Description Set of tools implemented into a shiny-based application for extracting and analyzing individual tree forest attributes from LiDAR (Light Detection and Ranging) data.

License GPL-3

Encoding UTF-8

Depends R (>= 4.0)

Imports shiny, RColorBrewer, spatstat.geom, spatstat.explore, raster, rasterVis, sp, geometry, rgdal, rgl, lidR, pryr, sf, stars

Suggests rmarkdown

RoxygenNote 7.2.3

URL <https://github.com/carlos-alberto-silva/weblidar-treetop>

BugReports <https://github.com/carlos-alberto-silva/weblidar-treetop/issues>

NeedsCompilation no

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launchApp	<i>Launch treetop application</i>
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Description

This function launch the treetop application.

Usage

```
launchApp(...)
```

Arguments

... additional parameters from the [runApp](#) function in the *shiny* package.

Details

The treetop shiny app will pop up for LiDAR data visualization, processing and analysis. Import a LiDAR-derived Canopy Height Model (CHM, as .tif, .asc or .img format) for custom data processing. Interrupt R to stop the application (usually by pressing Ctrl+C or Esc). Individual trees are detected and their crown are delineated using methods described in Silva et al. (2016) and implemented in the [silva2016](#) function in the *lidR* (Roussel et al. 2020) package.

Value

This function does not return.

References

Chang, W., Cheng, J., Allaire, J. J., Xie, Y., & McPherson, J. (2021). shiny: Web Application Framework for R. <https://CRAN.R-project.org/package=shiny>

Leite, R.V.; Silva, C.A.; Mohan, M.; Cardil, A.; Almeida, D.R.A.d.; Carvalho, S.d.P.C.e; Jaafar, W.S.W.M.; Guerra-Hernández, J.; Weiskittel, A.; Hudak, A.T.; Broadbent, E.N.; Prata, G.; Valbuena, R.; Leite, H.G.; Taquetti, M.F.; Soares, A.A.V.; Scolforo, H.F.; Amaral, C.H.d.; Dalla Corte, A.P.; Klauberg, C. (2020). Individual Tree Attribute Estimation and Uniformity Assessment in Fast-Growing Eucalyptus spp. Forest Plantations Using Lidar and Linear Mixed-Effects Models. Remote Sens. 12, 3599. doi:10.3390/rs12213599

Roussel, J.R., Auty, D., Coops, N. C., Tompalski, P., Goodbody, T. R. H., Sánchez Meador, A., Bourdon, J.F., De Boissieu, F., Achim, A. (2020). lidR : An R package for analysis of Airborne Laser Scanning (ALS) data. Remote Sensing of Environment, 251, 112061. doi:10.1016/j.rse.2020.112061

Silva, C. A., Hudak, A. T., Vierling, L. A., Loudermilk, E. L., O'Brien, J. J., Hiers, J. K., Khosravipour, A. (2016). Imputation of Individual Longleaf Pine (Pinus palustris Mill.) Tree Attributes from Field and LiDAR Data. Canadian Journal of Remote Sensing, 42(5), 554–573. doi:10.1080/07038992.2016.1196582

Examples

```
## Not run:  
  
# Launch treetop application  
treetop::launchApp(launch.browser = TRUE)  
  
## End(Not run)
```

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