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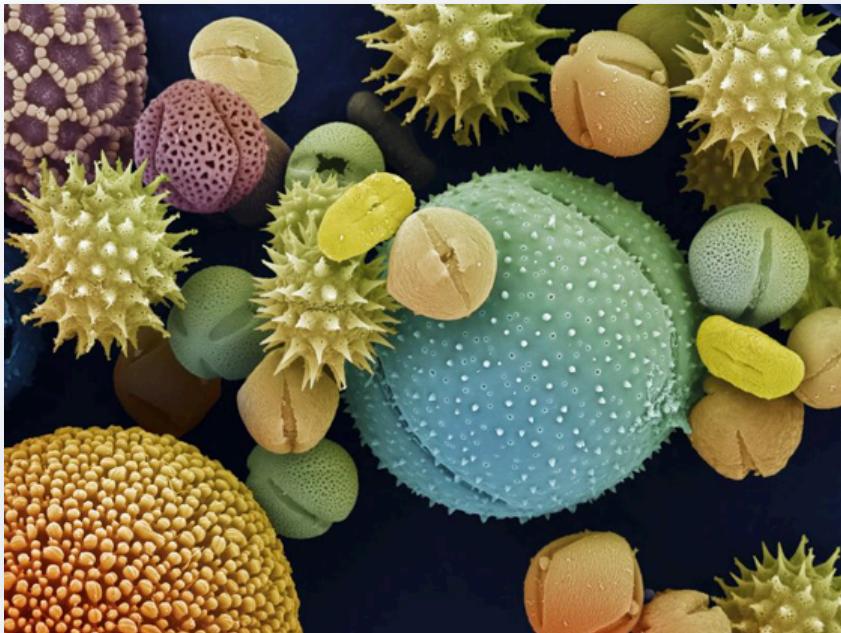
AeRobiology

**Análisis de datos biológicos
en el aire con R**

Jesús Rojo, Antonio Picornell, Jose Oteros

aerobiology.package@gmail.com

AEROBIOLOGÍA



Shakun, 2018. *Nature*

- Estudio del contenido en el aire de organismos o partículas de origen biológico
- Interés desde diferentes ámbitos (salud pública, agronomía, medio ambiente...)

La **gran cantidad de datos** registrados durante décadas y el creciente avance de **muestreadores automáticos** requieren el uso de nuevas **herramientas de análisis de mayor eficiencia** que permitan la automatización de tareas.

AeRobiology
cc) J. Rojo, A. Picornell & J. Oteros



Procesamiento

Raw data

Data processing

Interpretation

Results

Publication

AeRobiology



Análisis

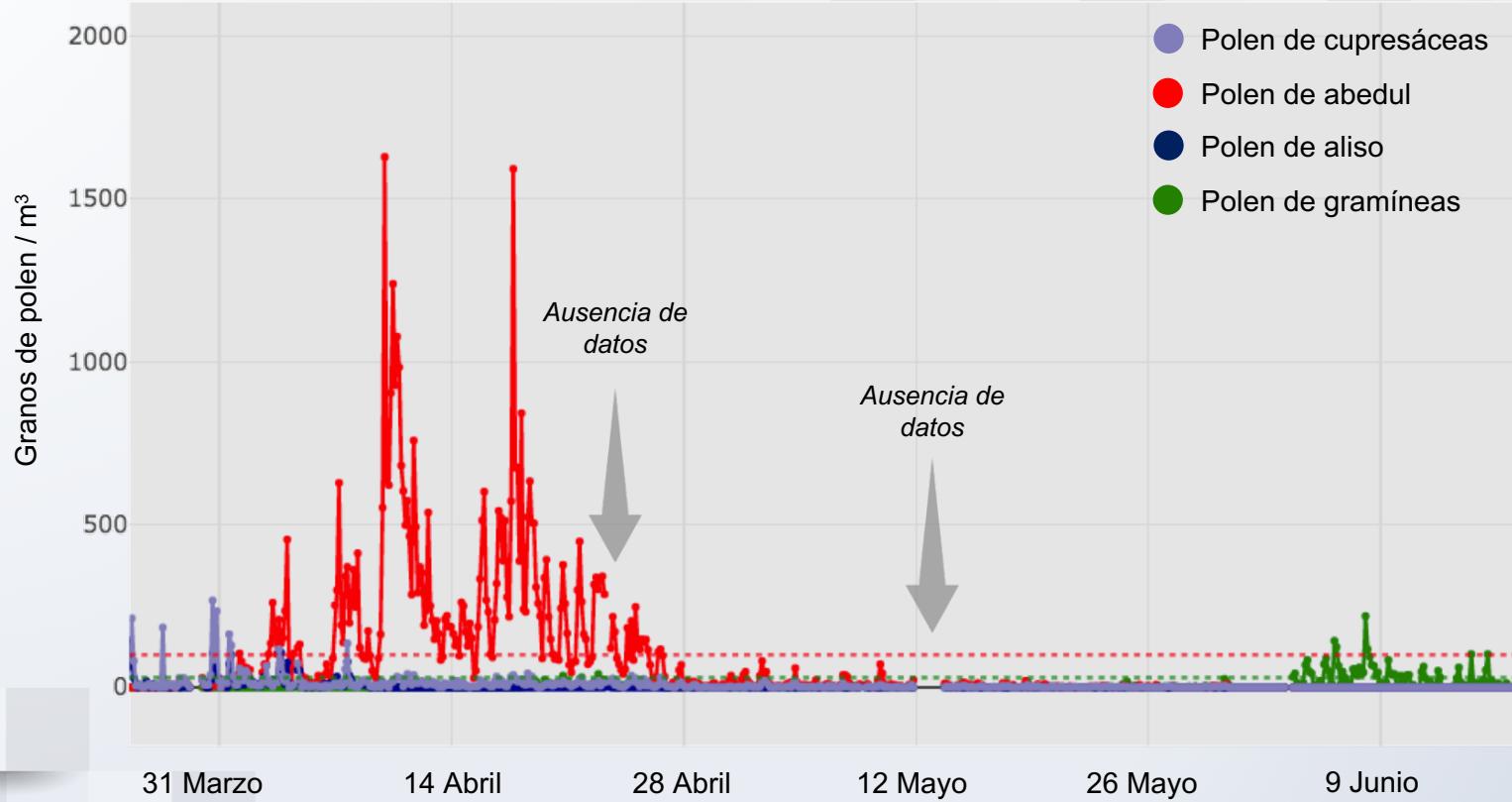


Visualización

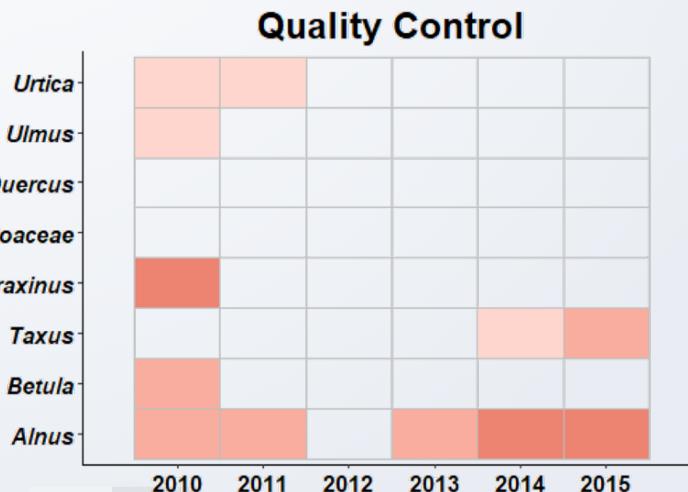
1.

PROCESAMIENTO DE DATOS

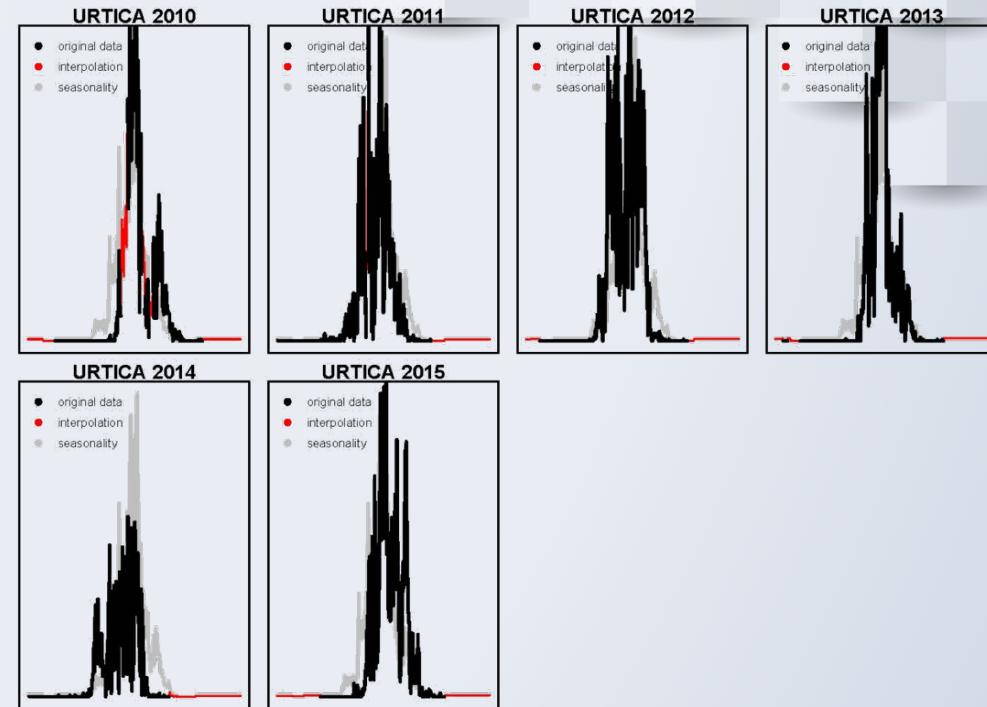
Funciones para evaluar la calidad de los
datos



quality_control()



Interpollen()

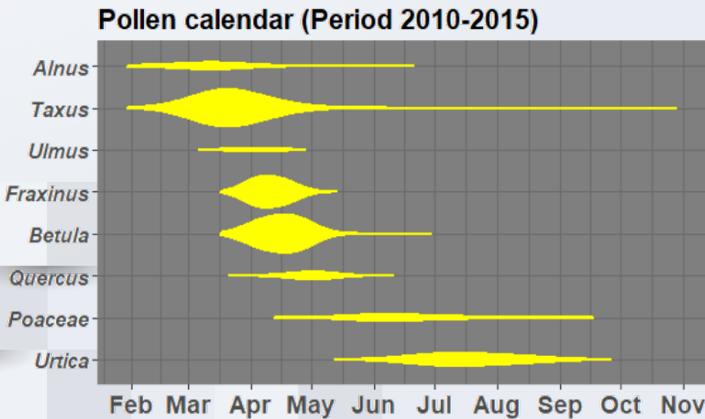
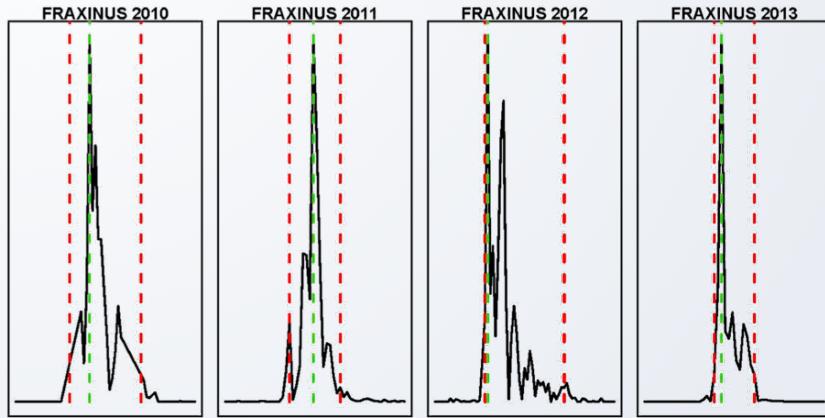


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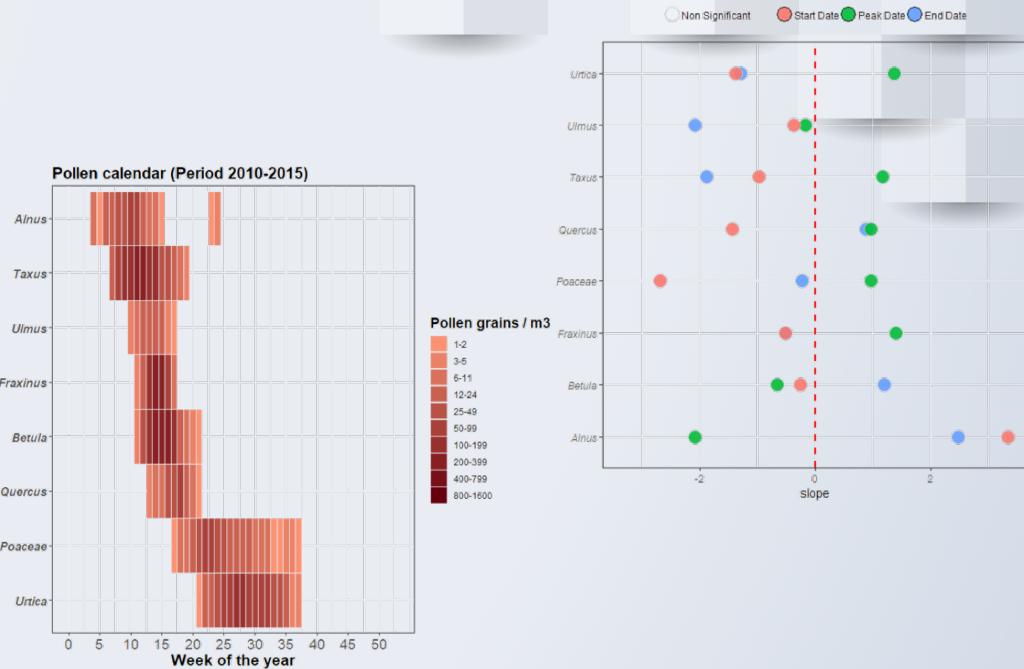
ANÁLISIS AEROBIOLÓGICO

Funciones para analizar los datos y
realizar los principales cálculos

calculate_ps()



analyse_trend()



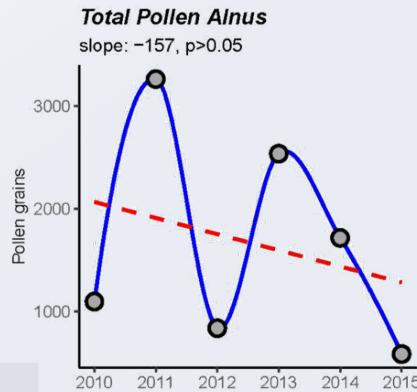
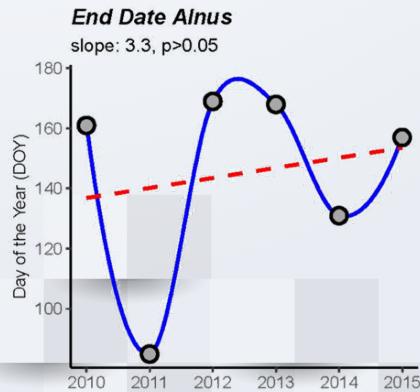
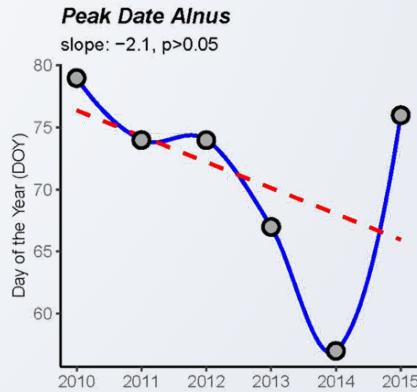
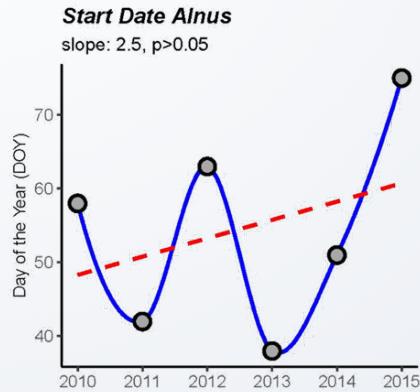
pollen_calendar()

3.

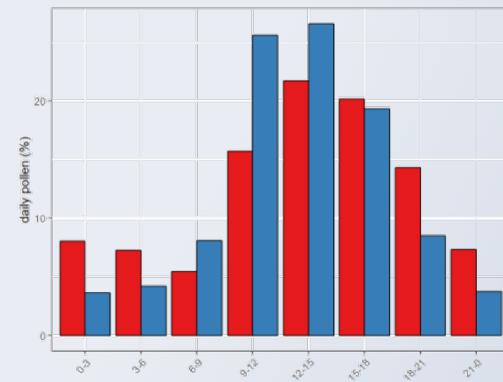
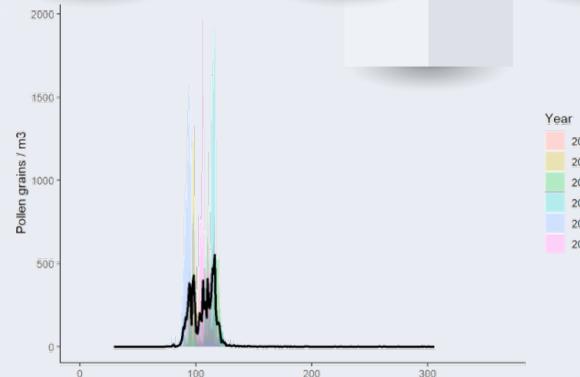
GRÁFICOS Y VISUALIZACIONES

Funciones especializadas en la
visualización de los resultados

plot_trend()

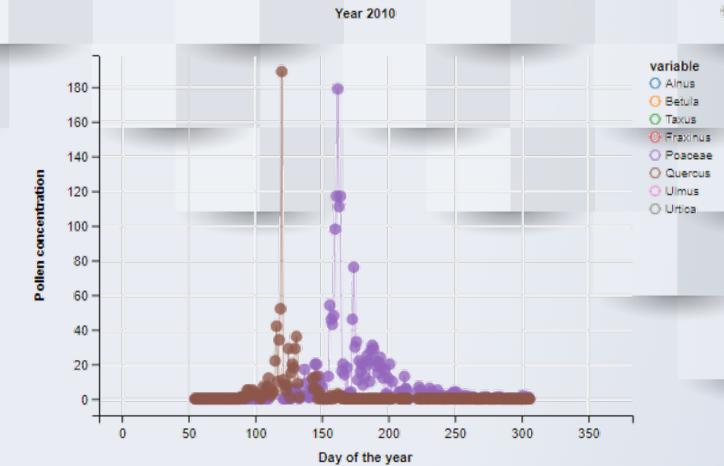
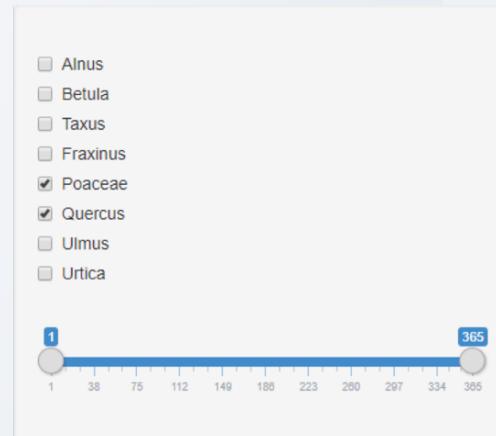


plot_summary()

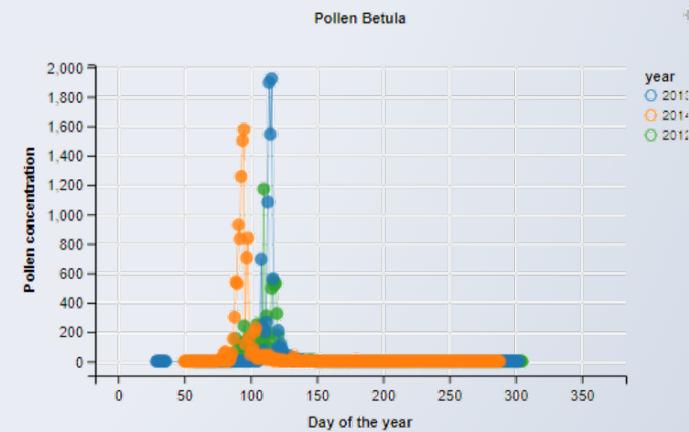
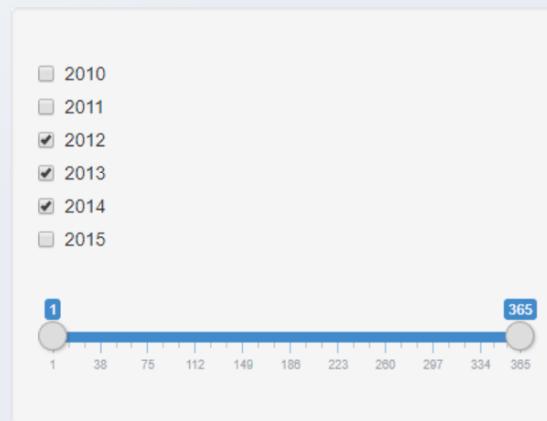


plot_hour()

iplot_pollen()



iplot_years()



CONTRIBUCIÓN CIENTÍFICA

DOI: 10.1111/2041-210X.13203

Methods Ecol Evol.
2019; 10: 1371–1376.

Factor de impacto (2018):
7,090 (Primer Decil)

Methods in Ecology and Evolution



AeRobiology: The computational tool for biological data in the air

Jesús Rojo^{1,2} | Antonio Picornell³ | Jose Oteros²

¹Institute of Environmental Sciences (Botany), University of Castilla-La Mancha, Toledo, Spain

²Center of Allergy & Environment (ZAUM), Member of the German Center for Lung Research (DZL), Technical University of Munich/Helmholtz Center, Munich, Germany

³Department of Plant Biology, University of Malaga, Malaga, Spain

Correspondence
Jesús Rojo
Email: jesus.rojo.ubeda@gmail.com

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Handling Editor: Samantha Price

Abstract

1. Aerobiological databases are constantly increasing. Many of them contain long and extensive time series of data which are very difficult and tedious to manage.
2. The development of new real-time automatic sampling devices also requires new tools to reduce time of calculations and data management. In this sense, the *AeRobiology* R package has been implemented to accelerate and facilitate these tasks.
3. This package was structured in three sections based on (a) the checking of the database, (b) calculation of the main aerobiological indexes and (c) visualization of the results.
4. The *AeRobiology* package contains numerous functions which, in conjunction, solve the main general tasks that scientists must assume for the analysis of the biological data.
5. The package is freely distributed under GNU General Public License and can directly be installed from CRAN (<http://cran.r-project.org/>). The reference manual is available at <https://cran.r-project.org/web/packages/AeRobiology>. Contact: aerobiology.package@gmail.com.

KEY WORDS

aerobiology, automation, bioaerosols, bioinformatics, computational biology, pollen diversity, R programming

REPERCUSIÓN

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Please, contact us: aerobiology_pkdckag@gmail.com

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A Computational Tool for Aerobiological Data

Phenological parameters

See this code for more information

+UCLM UNIVERSIDAD DE MÁLAGA CAUM

8 seasons "Aerobiology" based on R software

AeRobiology package for R

AeRobiology v. 1.0.0: A computational Tool for Aerobiological Data

The new R package developed by Jesus Rojo, Antonio Picornell and Jose Oteros. This is a very useful tool for managing aerobiological databases, elaborating the main calculations and visualization of results. In a first step, data are checked using tools for quality control and all missing gaps are completed. Then, the main parameters of the pollen season are calculated and represented graphically. Multiple graphical tools are available: pollen calendars, phenological plots, time series, tendencies, interactive plots, abundance plots and many more. Full description available in:

<https://cran.r-project.org/web/packages/AeRobiology/AeRobiology.pdf>
<https://www.rdocumentation.org/packages/AeRobiology/versions/1.0.0>



Spanish Association of Aerobiology

and the University of Castilla-La Mancha

IV SEMINAR ADVANCES IN AEROBIOLOGY

AeRobiology: a new R package to deal with aerobiological data

teachers

Antonio Picornell (University of Malaga)

Jesus Rojo (University of Castilla-La Mancha & ZAUM)

Jose Oteros (Zentrum Allergie und Umwelt, ZAUM)

MARCH 14, 2019 | 3:00 - 7:00 PM
TOLEDO (SPAIN)
UNIVERSITY OF CASTILLA-LA MANCHA

Two options of assistance

Classroom: University of Castilla-La Mancha
Avda. Carlos III s/n (Toledo, Spain)

Webinar by Skype



Registration & Information

Contact & Registration:
secretaria@aerobiologia.org
Deadline: 7th March
Members of AEA and IAA: Free

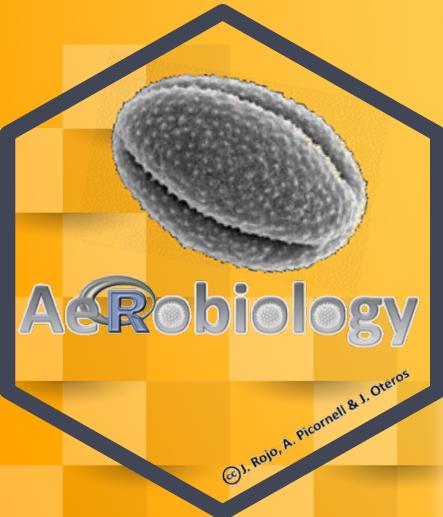




R Studio®



GRACIAS!



aerobiology.package@gmail.com



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