

A. PERSONAL DATA

Name and Surname	Ángel Rodés Bolumburu		
DNI	25478265S	Age	42
Researcher's identification number	Researcher ID	C-9228-2011	
	Scopus Author ID	15073351100	
	ORCID	0000-0001-8488-7689	
	Personal webpage	www.angelrodes.com	

A.1. Current professional situation

Institution	University of Santiago de Compostela (Spain)		
Dpt. / Centre	Geography / Xeografía e Historia		
Phone	(+34) 624035360	Email	angelrodes@gmail.com
Professional category	Research fellow "María Zambrano"	Start date	2022
Keywords	Geochronology, Earth Surface Processes, Geomorphology		

A.2. Previous positions

Period	Job Title / Name of Employer / Country
2020-2022	Research Scientist / University of Glasgow / UK
2011-2020	Research Associate / University of Glasgow / UK
2010-2011	Technologist / University of Barcelona / Spain
2008-2010	Expert technician / University of Barcelona / Spain
2008-2009	Associate Lecturer / University of Barcelona / Spain
2003-2007	Research Assistant "FPI" / University of Barcelona / Spain
2001-2002	Teaching Assistant Scholarship / University of Zaragoza / Spain

A.3. Academic qualifications

Bachelor/Master/PhD	University	Year
PhD. in Earth Sciences	University of Barcelona University of Aix-Marseille III	2008
MSc. in Earth Sciences	University of Barcelona	2004
BSc(Hons) in Geology	University of Zaragoza	2002

A.4. General quality indicators of scientific research

Publications in Web of Science:	43	Publications indexed in Scopus:	45
Sum of times cited (WoS):	931	Citations (Scopus):	1003
H-index (WoS):	17	H-index (Scopus):	16
Publications Q1 (JCR):	32	Publications Q1 (SJR):	38

Participation in projects & contracts:

- 9 R&D projects funded through competitive calls (total **5.7M€**, **95k€** as PI of 1 project).
- 7 R&D contracts (total **5.3M€**, **50k€** as PI of 4 contracts).

B. SUMMARY OF THE CURRICULUM

My expertise focuses on **cosmogenic nuclide dating** and **surface-process modeling**. In addition to providing key geochronological constraints, my most relevant contribution is creating numerical and statistical tools to transform geochemical data into meaningful models, with the aim of understanding how the Earth is changing.

I bring geochemistry and numerical modeling closer to geomorphology, turning data that would normally go unnoticed into the central part of high-impact projects.

In the last years, I modeled a wide variety of processes related to Global Change, Natural Hazards, River Dynamics and Agricultural Sustainability:

- **Quantitative climatic effects in polar & mountain areas.**
- **History of the large basins hidden in alluvial deposits.**
- **Quantification of fault activity through sediment geochemistry.**
- **Agricultural soil formation rates.**

My role as a geochronologist is key to the success of the projects I take part in, focusing my research towards technical and analytical advances. This is reflected in a high rate of scientific production and award generation.

C. MOST RELEVANT MERITS

C.1. Most relevant publications

- **Rodés, Á.** (2021). The NUNAtak Ice Thinning (NUNAIT) Calculator for Cosmonuclide Elevation Profiles *Geosciences*.11-9. ISSN 2076-3263.
- Karampaglidis, T.; Benito-Calvo, A.; **Rodés, A.**; Braucher, R.; Pérez-González, A.; Pares, J.; Stuart, F.; Di Nicola, L.; Bourles, D. (2020). Pliocene endorheic-exhoreic drainage transition of the Cenozoic Madrid Basin (Central Spain). *Global and Planetary Change*. 194, pp.103295-103295. ISSN 0921-8181.
- **Rodés, Á.**; Evans, D. L. (2020). Cosmogenic soil production rate calculator. *MethodsX*. 7, pp.100753-100753. ISSN 2215-0161.
- Carracedo, A.; **Rodés, Á.**; Smellie, J.L.; Stuart, F.M. (2019). Episodic erosion in West Antarctica inferred from cosmogenic ^3He and ^{10}Be in olivine from Mount Hampton. *Geomorphology*. 327, pp.438-445.
- Hughes, P. D.; Fink, D.; **Rodés, Á.**; Fenton, C. R.; Fujioka, T. (2018). Timing of Pleistocene glaciations in the High Atlas, Morocco: New ^{10}Be and ^{36}Cl exposure ages. *Quaternary Science Reviews*. 180, pp.193-213
- Sugden, D. E., Hein, A. S., Woodward, J., Marrero, S. M., **Rodés, Á.**, Dunning, S. A., Stuart, F. M., Freeman, S. P.H.T. , Winter, K. and Westoby, M. J. (2017). The million-year evolution of the glacial trimline in the southernmost Ellsworth Mountains, Antarctica. *Earth and Planetary Science Letters*. 469, pp.42-52.
- **Rodés, Á.**; Pallas, R.; Ortuño, M.; García-Melendez, E.; Masana, E. (2014). Combining surface exposure dating and burial dating from paired cosmogenic depth profiles. Example of El Límite alluvial fan in Huércal-Overa basin (SE Iberia). *Quaternary Geochronology*. 19-0, pp.127-134.
- Ballantyne, C. K.; Wilson, P.; Gheorghiu, D.; **Rodés, Á.** (2014). Enhanced rock-slope failure following ice-sheet deglaciation: timing and causes. *Earth Surface Processes and Landforms*. 39-7, pp.900-913.
- Anton, L.; **Rodés, Á.**; De Vicente, G.; Pallas, R.; Garcia-Castellanos, D.; Stuart, F. M.; Braucher, R.; Bourles, D. (2012). Quantification of fluvial incision in the Duero Basin (NW Iberia) from longitudinal profile analysis and terrestrial cosmogenic nuclide concentrations. *Geomorphology*. 165-166-0, pp.50-61
- **Rodés, Á.**; Pallàs, R.; Braucher, R.; Moreno, X.; Masana, E.; Bourlès, D. (2011). Effect of density uncertainties in cosmogenic ^{10}Be depth-profiles: Dating a cemented Pleistocene alluvial fan (Carboneras Fault, SE Iberia). *Quaternary Geochronology*. 6-2, pp.186-194.
- Pallàs R.; **Rodés Á.**; Braucher R.; Carcaillet J.; Ortuño M.; Bordonau J.; Bourlès D.; Vilaplana J.M.; Masana E.; Santanach P. (2006). The late Pleistocene and Holocene glaciation in the Pyrenees: A critical review and new evidence from ^{10}Be exposure ages, south-central Pyrenees. *Quaternary Science Reviews*. 25, pp.2937-2963.

C.2. Invited presentations at international meetings

- **Á. Rodés** (2021) ^{10}Be & Agriculture. *Scottish Workshop for Cosmogenic Practitioners*, 2021, Scottish Universities Environmental Research Centre, East Kilbride, UK.
- **Á. Rodés** (2019) Natural examples of cosmogenic signatures from complex exposure and burial histories. *Seminars of The State Key Laboratory of Environmental Geochemistry* (SKLEG – Chinese Academy of Sciences), 2019, Guiyang, China.
- **Á. Rodés** (2015) Cosmogenic nuclides in sediments. *UoG-UNESP geoscience research symposium*, 2015, University of Glasgow, UK.
- **Á. Rodés**, A. Davidson & M. Miguens-Rodriguez (2014) Implications of wet chemistry techniques and stable ^9Be and ^{27}Al analysis on the final ^{10}Be and ^{26}Al concentrations. *Scottish Workshop for Cosmogenic Practitioners*, 2014, Edinburgh, UK.
- **Á. Rodés** (2013) Combined surface exposure and burial dating from cosmogenic ^{10}Be - ^{26}Al depth profiles. *ESF EARTH TIME-EU Scientific Meeting*, 2013, Burgos, Spain.
- **Á. Rodés** (2012) Applications of combined cosmogenic ^{10}Be and ^{26}Al depth profiles in sediments. *Seminars of the School of Geography, Earth & Environmental Sciences*, 2012, University of Plymouth, UK.

C.3. Participation in R&D and Innovation projects

- ***Resolving the timing of the local Last Glacial Maximum and penultimate glaciation in the understudied northeast of Patagonia.** British Geological Survey. PI Andrew Hein. (University of Edinburgh). 2020 – 2022. 43,268 €. (***ongoing project**)
- Reconstructing glacial history and landscape evolution in Patagonia. Natural Environment Research Council. PI Andrew S. Hein. (University of Edinburgh). 2018 – 2022. 55.000 €.
- Defining the Last Glacial Maximum of the Patagonian Ice Sheet and its termination in its understudied northeast sector (43°S). Natural Environment Research Council. PI Andrew Hein. (University of Edinburgh). 2019 – 2021. 64,176 €.
- Servicio de análisis de muestras mediante la técnica de datación de núclidos cosmogénicos. (Licitación 2018/2501SR03). CENIEH. **PI Ángel Rodés**. (SUERC). 2018 – 2019. 114,810 €.
- Temporal Variability in Sediment Flux of the Ganga River Using Detrital ^{10}Be . Natural Environment Research Council. PI Hugh Sinclair. (University of Edinburgh). 2015 – 2016. 30,816 €.
- Ice free enclaves in West Greenland during the last glacial cycle? Scottish Universities Environmental Research Centre. PI David Roberts. (Durham University). 2012–2014. 14,328 €.
- The pattern, timing and dynamics of glaciation in the Cairngorm mountains. Natural Environment Research Council. PI David Graham. (University of Loughborough). 2012 – 2013. 6,432 €.
- Geociencias en Iberia: Estudios integrados de topografía y evolución 4D. (Topo-Iberia) CAYCIT (Comisión Asesora de Investigación Científica y Técnica. Ministerio de Educación y Ciencia). PI Josep Gallart Muset. (Universitat de Barcelona). 2006 – 2011. 5,400,000 €.
- Estudio Paleosísmico mediante Isotopos Cosmogénicos. Comisión Interministerial de Ciencia y Tecnología (CICYT). PI Pedro Francisco Santanach Prat. (Universitat de Barcelona). 2002 – 2007. 91,300 €.

C.4. Participation in R&D and Innovation contracts

- Análisis comercial de muestras mediante isótopos cosmogénicos. CENIEH. **PI Ángel Rodés**. 2020 – 2021. 34,000 €.
- Servicio en colaboración para la datación de muestras de superficies glaciares

mediante Be-10. Universidad Nacional de Educación a Distancia. **PI Ángel Rodés**. 2020 – 2021. 2,357 €.

- Análisis comercial de muestras mediante isótopos cosmogénicos. CENIEH. **PI Ángel Rodés**. 2019 – 2020. 7,000 €.
- National Environmental Isotope Facility – Cosmogenic nuclides (NEIF-Cosmo) UK Research and Innovation. PI Derek Fabel. (Scottish Universities Environmental Research Centre (SUERC)). 2019 – 2024. 2,662,000 €.
- Servicio en colaboración de preparación química de muestras para análisis de Be-10 mediante AMS. Universidad de Castilla la Mancha. **PI Ángel Rodés**. 2019 – 2020. 7,000 €.
- Cosmogenic Isotope Analysis Facility Natural Environment Research Council. PI Derek Fabel. (Scottish Universities Environmental Research Centre). 2016 – 2019. 1,560,000 €.
- Cosmogenic Isotope Analysis Facility Natural Environment Research Council. PI Rob Ellam. (Scottish Universities Environmental Research Centre). 2014 – 2016. 1,008,000 €.

C.5. Stays in public or private R&D centres

- Institute of Geochemistry. Chinese Academy of Sciences. 2019 (2 weeks). Guiyang (**China**).
- School of Geosciences. University of Edinburgh. 2016 (4 months). Edinburgh (**UK**).
- ASTER. CEREGE. 2009 and 2010 (1 month each). Aix-en-Provence (**France**).
- Earth and Environmental Science Department. New Mexico Institute of Mining and Technology (New Mexico Tech). 2006 (2 months). Socorro, New Mexico (**USA**).
- Département Géophysique / Géochimie Isotopique. CEREGE. 2004 and 2005 (4 months each). Aix-en-Provence (**France**).

C.6. Programming skills

- MATLAB/Octave: Bayesian statistics, Monte-Carlo simulations, Inverse modeling.
- Bash (Unix shell): Data acquisition, Text processing, Plotting.
- Wolfram: Symbolic algebra, Mathematical optimization.
- R: Statistics, Plotting.
- Python: Data acquisition, Text processing.

C.7. Other relevant merits

Teaching: Geology and Geological Engineering Degrees (U. Barcelona), MATLAB for Geoscientists (U. Glasgow), and Geography Degree (U. Santiago de Compostela).

32 **PhD students** trained in laboratory sample preparation, data analysis and modeling. Currently co-directing a PhD student at the University of Edinburgh.

Advisor on commissioning new laboratories in Brazil, Spain, China, and South Africa.

Convener: EGU 2021 and COSMO2022 workshop.

Topic **editor** of Geosciences special Issue “Cutting Edge Earth Sciences: Three Decades of Cosmogenic Nuclides”, and member of the **editorial board** of Geosciences Journal (MDPI).

Reviewer: international journals (e.g., Nature, Earth and Planetary Science Letters, Geology, Quaternary Geochronology), and technical assessment of CIAF & NEIF projects.

Scientific committees: CIAF (Secretary 2012-2018), and COSMO 2022 Scotland.

Academic accreditations: AQU: *Lector, Acreditació de Recerca / Agregat*; ANECA: *Profesor Ayudante Doctor, Profesor de Universidad Privada, Profesor Contratado Doctor*.