

Jorge Sevil Agualeles, PhD
Geomorphologist – Geohazards specialist

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EXPERIENCE

TRE ALTAMIRA S.L.U.

Sep 2024 - Present

- Analysis, assessment and reporting of InSAR results to clients.
- Database management and processing combining GIS software and Python.

Spanish Society of Geomorphology

(Sociedad Española de Geomorfología – SEG)

Dec 2022 – Present

- Coordination of the Young Geomorphologists Group, creator and webmaster of its scientific dissemination blog (<https://jovenes-geomorfologos-seg.quarto.pub/>), and participation in the Assemblies of the Spanish Society of Geomorphology as a board member.

University of Zaragoza

Oct 2018 – Dec 2023

Pre-doctoral researcher with a FPI fellowship (Spanish Government and European Social Fund)

Thesis title: Techniques applied to sinkhole investigation and monitoring.

Main objective: Development and assessment of innovative investigation techniques applicable to the study and monitoring of active sinkholes.

- Evaluation of complementary non-invasive techniques to map, quantitatively characterize, and monitor sinkholes in urban and peri-urban areas (detailed geomorphological mapping, ground penetrating radar – GPR –, electrical resistivity tomography – ERT –, high-precision leveling, and terrestrial laser scanner – TLS).
- Exploration of the usefulness of close-range structure from motion (SfM) photogrammetry using drone images to build high-resolution multi-temporal cartographic inventories of sinkholes, combining orthomosaics and digital surface models.
- Analysis of the evolution of the morphometry and spatio-temporal distribution of sinkholes to produce an objective basis for developing reliable susceptibility and hazard assessments, incorporating the temporal variability of their frequency-size relationships.
- Database management, analysis, and processing combining GIS software (QGIS, ArcGIS) and R programming language.
- Authorship and co-authorship of peer-reviewed scientific publications on geomorphology and geohazards (sinkholes, landslides, and seismic hazard assessments), in addition to technical reports on technological transfer and business consultancy.
- Effective communication of research findings to specialized audiences at scientific congresses and to non-specialized public and private administrators during technical and scientific transfer projects.
- Logistical preparation and execution of field campaigns in national and international contexts (Spain, Italy, USA, and Dead Sea).
- International research stays:
 - Geological Survey of Israel – Dead Sea (Nov – Dec 2021): Fieldwork in the Dead Sea to analyse the spatiotemporal patterns of sinkholes and the associated hazard variations.
 - University of Bologna, Italy (Mar – May 2022): Application and processing of terrestrial laser scanner data in caves and assessment of semi-automatic sinkhole mapping techniques.
- Collaboration in teaching activities for the bachelor's degree in Geology and in Environmental Sciences

Freelance Geologist

May 2018 – Sep 2018

- Participation as specialist in geological hazards in a fault activity analysis project for Geoalcali (S.L.): fieldwork, geomorphological mapping, trenching, and preparation of technical reports.
- Collaboration as scientific consultant in the data collection phase of a seismic hazard analysis project for Spanish nuclear power plants funded by Iberdrola (S.A.): fieldwork, geomorphological mapping, translation of technical reports, co-authorship of derived scientific publications.

EDUCATION

Ph.D., University of Zaragoza <i>Doctorate in Geology. International mention and Cum Laude distinction. Extraordinary doctorate award.</i>	Oct 2018 – Dec 2023
M.Sc., University of Barcelona and Autonomous University of Barcelona <i>Master's Degree in Mineral Resources and Geological Hazards. Ranked 1st</i>	Sep 2016 – Jul 2017
B.Sc., University of Zaragoza <i>Bachelor's Degree in Geology. Ranked 1st</i>	Sep 2011 – Sep 2015
University of Cardiff <i>Completion of my Bachelor's Degree in Geology during an ERASMUS grant</i>	Sep 2013 – Jun 2014

AWARDS AND COMPETITIVE GRANTS

- Extraordinary doctorate (PhD) prize from the University of Zaragoza (2023 – 2024).
- Recipient of a competitive grant from Geo-INQUIRE to attend the Corinth Summer School 2024 “Strain mapping for the characterization and prevention of geohazard events”.
- Recipient of a competitive grant from the "Associazione Italiana di Geografia fisica e Geomorfologia" to attend the "X AIGeo Italian Young Geomorphologists' Day" and "III IAG International Young Geomorphologists' Meeting”.
- Awarded first prize in the VI Call for the Best Scientific Publication by Young Members of the “Sociedad Española de Geomorfología”: <https://doi.org/10.1002/esp.5112>
- Extraordinary master prize from the University of Barcelona to the best academic record (2016 – 2017).
- Extraordinary degree prize from the University of Zaragoza to the best academic record (2011 – 2015).
- Undergraduate departmental collaboration scholarship at the University of Zaragoza (2014 – 2015).

TECHNICAL SKILLS

Scientific software:	QGIS, ArcGIS (ArcMap, ArcGIS Pro), CloudCompare, FARO SCENE, Agisoft Metashape, ReflexW, EarthImager 2D, Visual Topo, Stereonet, ImageJ
Programming languages:	R (applied in data-driven published research), Python (beginner)
Digital editing software:	Adobe Illustrator, Adobe Photoshop, Inkscape, GIMP, Affinity Designer, Affinity Photo, Affinity Publisher
Languages:	Spanish (native), English (C1, Cambridge ESOL International), French (beginner level)
Field data collection:	Fieldwork, geomorphological mapping, geophysical data collection, speleology, trenching

TRANSVERSAL SKILLS

Critical Thinking – Analytical Reasoning – Proactive Problem-Solving – Team Working – Project Planning – High Adaptability – Effective Communication – Detail Orientation – Self-Directed Learning – Fieldwork Enthusiast

PEER-REVIEW PUBLICATIONS

- Sevil-Aguareles, J.,** Gutiérrez, F., Benito-Calvo, A. (2025). Terrestrial Laser Scanner Versus Ground-Based Structure from Motion Photogrammetry for Sinkhole Characterization and Monitoring in an Urban Area. A Comparative Assessment in the Evaporite Karst of Zaragoza City, Ne Spain. *Earth Surface Processes and Landforms* (Under Review). Pre-print available at SSRN: <https://ssrn.com/abstract=4889108>
- Sevil-Aguareles, J.,** Pisani, L., Chiarini, V., Santagata, T., De Waele, J. (2024). Gypsum cave notches and their palaeoenvironmental significance: a combined morphometric study using terrestrial laser scanning, traditional cave mapping, and geomorphological observations. *Geomorphology*, 471 (109576), 1-13. Open Access. <https://doi.org/10.1016/j.geomorph.2024.109576>
- Sevil, J.,** Gutiérrez, F. (2024). Temporal variability of sinkhole hazard illustrated in the western shore of the Dead Sea. *Natural Hazards*, 1-15. Open Access. <https://doi.org/10.1007/s11069-024-06708-9>

- Sevillano, P., Preciado-Garbayo, J., **Sevil, J.**, Gutiérrez, F., Martínez, J. J., Martín-López, S., González-Herráez, M. (2023). Vertical displacement measurement in a slow-moving sinkhole using BOTDA. *Photonic Sensors* 14 (240122): 1-17. Open Access. <https://doi.org/10.1007/s13320-023-0696-7>
- Gutiérrez, F., **Sevil, J.**, Sevillano, P., Preciado-Garbayo, J., Martínez, J. J., Martín-López, S., González-Herráez, M. (2023). The application of distributed optical fiber sensors (Botda) to sinkhole monitoring. Review and the case of a damaging sinkhole in the Ebro valley evaporite karst (NE Spain). *Engineering Geology*, 325 (107289): 1-13. Open Access. <https://doi.org/10.1016/j.enggeo.2023.107289>
- Migoñ, P., Gutiérrez, F., Parenti, C., **Sevil, J.** (2023). Ebro Valley Gypsum Escarpment near Zaragoza (NE Spain). - Combination of Highly Valuable Rock Record, Dynamic Geomorphosites and Associated Cultural Heritage. *Geoheritage* 15, 110. Open Access. <https://doi.org/10.1007/s12371-023-00878-x>
- Sevil, J.**, Gutiérrez, F. (2023). Morphometry and evolution of sinkholes on the western shore of the Dead Sea. Implications for susceptibility assessment. *Geomorphology*, 434(108732), 108732. Open Access. <https://doi.org/10.1016/j.geomorph.2023.108732>
- Gutiérrez, F., **Sevil, J.**, Migoñ, P. (2023). Landslides in the Remolinos gypsum escarpment (NE Spain): controls imposed by stratigraphy, fluvial erosion, and interstratal salt dissolution. *Landslides*, 20: 2075-2093. Open Access. <https://doi.org/10.1007/s10346-023-02090-y>
- Sevil, J.**, Benito-Calvo, A., Gutiérrez, F. (2021). Sinkhole subsidence monitoring combining terrestrial laser scanner and high-precision levelling. *Earth Surface Processes and Landforms*, 46(8), 1431–1444. <https://doi.org/10.1002/esp.5112>
- Guerrero, J., **Sevil, J.**, Desir, G., Gutiérrez, F., Arnay, Á. G., Galve, J. P., Reyes-Carmona, C. (2021). The Detection of Active Sinkholes by Airborne Differential Li- DAR DEMs and InSAR Cloud Computing Tools. *Remote Sensing*, 13(16), 3261. Open Access. <https://doi.org/10.3390/rs13163261>
- Sevil, J.**, Gutiérrez, F., Carnicer, C., Carbonel, D., Desir, G., García-Arnay, Á., Guerrero, J. (2020). Characterizing and monitoring a high-risk sinkhole in an urban area underlain by salt through non-invasive methods: Detailed mapping, high-precision leveling and GPR. *Engineering Geology*, 272, 105641. <https://doi.org/10.1016/j.enggeo.2020.105641>
- Parenti, C., Gutiérrez, F., Baioni, D., García-Arnay, Á., **Sevil, J.**, Luzzi, E. (2020). Closed depressions in Kotido crater, Arabia Terra, Mars. Possible evidence of evaporite dissolution-induced subsidence. *Icarus*, 341, 113680. <https://doi.org/10.1016/j.icarus.2020.113680>
- Gutiérrez, F., Carbonel, D., **Sevil, J.**, Moreno, D., Linares, R., Comas, X., Zarroca, M., Roqué, C., McCalpin, J.P. (2020). Neotectonics and late Holocene paleoseismic evidence in the Plio-Quaternary Daroca Half-graben, Iberian Chain, NE Spain. Implications for fault source characterization. *Journal of structural geology*, 131, 103933. <https://doi.org/10.1016/j.jsg.2019.103933>
- Gutiérrez, F., **Sevil, J.**, Silva, P. G., Roca, E., Escosa, F. (2019). Geomorphic and stratigraphic evidence of Quaternary diapiric activity enhanced by fluvial incision. Navarrés salt wall and graben system, SE Spain. *Geomorphology*, 342, 176-195. <https://doi.org/10.1016/j.geomorph.2019.06.002>
- Carbonel, D., Gutiérrez, F., **Sevil, J.**, McCalpin, J. P. (2019). Evaluating Quaternary activity versus inactivity on faults and folds using geomorphological mapping and trenching: Seismic hazard implications. *Geomorphology*, 338, 43-60. <https://doi.org/10.1016/j.geomorph.2019.04.015>
- Gutiérrez, F., Fabregat, I., Roqué, C., Carbonel, D., Zarroca, M., Linares, R., Yechieli, Y., García-Arnay, Á., **Sevil, J.** (2019). Sinkholes in hypogene versus epigene karst systems, illustrated with the hypogene gypsum karst of the Sant Miquel de Campmajor Valley, NE Spain. *Geomorphology*, 328, 57-78. <https://doi.org/10.1016/j.geomorph.2018.12.003>
- Gutiérrez, F., Benito-Calvo, A., Carbonel, D., Desir, G., **Sevil, J.**, Guerrero, J., Martínez-Fernández, A., Karampaglidis, T., García-Arnay, Á., Fabregat, I. (2019). Review on sinkhole monitoring and performance of remediation measures by high-precision leveling and terrestrial laser scanner in the salt karst of the Ebro Valley, Spain. *Engineering Geology*, 248, 283-308. <https://doi.org/10.1016/j.enggeo.2018.12.004>
- Benito-Calvo, A., Gutiérrez, F., Martínez-Fernández, A., Carbonel, D., Karampaglidis, T., Desir, G., **Sevil, J.**, Guerrero, J., Fabregat, I., García-Arnay, Á., 2018. 4D monitoring of active sinkholes with a terrestrial laser scanner (TLS): a case study in the evaporite karst of the Ebro valley, NE Spain. *Remote Sensing*, 10(4), 571. Open Access. <https://doi.org/10.3390/rs10040571>
- Sevil, J.**, Gutiérrez, F., Zarroca, M., Desir, G., Carbonel, D., Guerrero, J., Linares, R., Roqué, C., and Fabregat, I. (2017). Sinkhole investigation in an urban area by trenching in combination with GPR, ERT and high-precision leveling. Mantled evaporite karst of Zaragoza city, NE Spain. *Engineering Geology*, 231, 9-20. <https://doi.org/10.1016/j.enggeo.2017.10.009>

SCIENTIFIC DISSEMINATION

Blog post – **Sevil Agualeles, J.** (2024, September 11). “Peligrosidad por dolinas: un análisis detallado en el Mar Muerto”. “Agrupación de Jóvenes Geomorfólogos” of the Spanish Society of Geomorphology (“Sociedad Española de Geomorfología” – SEG). Retrieved from https://jovenes-geomorfologos-seg.quarto.pub/posts/12_09_24_SevilAgualeles/post.html.

Dissemination publications about the speleological, archaeological, and paleontological heritage discovered by the “Centro de Espeleología de Aragón”:

- Gisbert, M., Lanau, P., Laborda, R., Sauqué, V., **Sevil, J.**, Villalba-Mouco, V. (2021). Aragón Subterráneo. Boletín de exploraciones nº3. Monografía: Cavernas y Arte Rupestre de Salvatierra de Escá (Centro de Espeleología de Aragón). Boletín de exploraciones del Centro de Espeleología de Aragón. Zaragoza, Aragón (España). ISSN 2530-7363. <https://urlr.me/Jt6d9>
- Gisbert, M., Laborda, R., Sauqué, V., **Sevil, J.**, Villalba-Mouco, V., Lanau, P. (2019). Aragón Subterráneo. Boletín de exploraciones nº2. Monografía: Sistema de Lecherines (Centro de Espeleología de Aragón). Boletín de exploraciones del Centro de Espeleología de Aragón. Zaragoza, Aragón (España). ISSN 2530-7363. <https://urlr.me/tp5Zh>
- Gisbert, M., Laborda, R., Sauqué, V., **Sevil, J.**, Villalba-Mouco, V., Lanau, P. (2017). Aragón Subterráneo. Boletín de exploraciones nº1. Monografía: El karst de Purujosa (Centro de Espeleología de Aragón). Boletín de exploraciones del Centro de Espeleología de Aragón. Zaragoza, Aragón (España). ISSN 2530-7363. <https://urlr.me/zCyTR>

EDITORIAL WORK

Closson, D., Al-Halbouni, D., Baer, G., Siebert, C., **Sevil, J.** [Guest Editors]. (2024). Remote Sensing of the Dead Sea Region. Remote Sensing [Special Issue]. ISSN 2072-4292. https://www.mdpi.com/journal/remotesensing/special_issues/deadsea

PARTICIPATION IN RESEARCH PROJECTS

I-2024/014, “SPIRAL / eStrategia PIRenaica de Avisos por movimientos de Ladera (Poctefa 2021-2027)”. Period: 2024 – 2026. INTERREG POCTEFA 2021 – 2027. PI: Jesús Guerrero Iturbe (University of Zaragoza). 357,217 €. I am part of the working team and I collaborate in the acquisition, processing and analysis of 3D point clouds.

PID2021-123189NB-I00, “Procesos geomorfológicos en sistemas salinos activos. Levantamiento, subsidencia, erosión química, deslizamientos, alteración en drenajes (DIAPERNO)”. Period: 2022 – 2026. “Ministerio de Ciencia e Innovación del Gobierno de España”. PI: Francisco Gutiérrez Santolalla (University of Zaragoza). 217,800 €. I participate in the working team and my role is focused on geomorphological mapping and morphometric analyses.

CGL2017-85045-P, “Desarrollo de metodologías para la cartografía, caracterización, monitorización y predicción de dolinas en sistemas kársticos epigénicos e hipogénicos”. Period: 2018 – 2022. “Ministerio de Economía, Industria y Competitividad” and European Social Fund (ESF). PI: Francisco Gutiérrez Santolalla (University of Zaragoza). 121,000 €. I completed my doctoral thesis within this project under the supervision of Francisco Gutiérrez Santolalla (UZ) and Alfonso Benito Calvo (CENIEH). I authored or co-authored 15 scientific publications related to this project.

TEACHING EXPERIENCE

“**Contratado doctor**” certification by the Spanish National Agency for Quality Assessment and Accreditation (ANECA), for the purposes of hiring university teaching and research staff.

I have **194.25 hours of certified teaching activity** in the following courses:

- **Geomorphology** (“Geomorfología”). Bachelor’s Degree in Geology at the University of Zaragoza.
- **Geomorphological and Geo-Environmental Mapping** (“Cartografía geomorfológica y geoambiental”). Bachelor’s Degree in Geology at the University of Zaragoza.
- **Geological Engineering** (“Ingeniería geológica”). Bachelor’s Degree in Geology at the University of Zaragoza.

- **Geological Hazards** (“Riesgos geológicos”). Bachelor’s Degree in Geology at the University of Zaragoza.
- **Fundamentals of Geology for the study of the Environment** (“Fundamentos de geología para el estudio del medio ambiente”). Bachelor’s Degree in Environmental Sciences at the University of Zaragoza.
- **Co-supervision of Final Degree Projects** (“Trabajo de Fin de Grado”). Bachelor’s Degree in Geology at the University of Zaragoza.

RELATED PROFESSIONAL EXPERIENCE

Peer review – International reviewer for a project submitted to the National Science Centre (NCN) in Poland.

Peer review – Reviewed 17 scientific articles across 9 distinct JCR-indexed journals.

Contract – “Monitorización de la dolina de Alcalá de Ebro mediante nivelación de alta precisión y láser escáner terrestre” (Monitoring of the sinkhole in Alcalá de Ebro by means of high-precision leveling and terrestrial laser scanner). CTA - Consultores Técnicos Asociados S.A. PI: Francisco Gutiérrez Santolalla (University of Zaragoza). November 2021 – July 2022. 7,865 €.

Scientific Consultancy – Gutiérrez, F., Desir, G., Guerrero, J., García-Arnay, Á., **Sevil, J.** (2021). “Valoración sobre las posibles afecciones del Proyecto constructivo del acondicionamiento de la carretera HU-V- 8111 de acceso a Piracés sobre el Lugar de Interés Geológico (LIG) Areniscas de Piracés” (Assessment of the possible effects of the construction project for the improvement of the HU-V-8111 access road to Piracés on the Site of Geological Interest (LIG) Areniscas de Piracés). “Departamento de Ciencias de la Tierra, Universidad de Zaragoza”. PI: Francisco Gutiérrez (University of Zaragoza).

Scientific Consultancy – Hanson, K., Gutiérrez, F., Silva, P.G., Bardají, T., Escosa, F., Roca, E., Elez, J., Giner, J.L., Huerta, P., Martínez, A.M., Roquero, E., **Sevil, J.**, Tapias, F. (2018). New data collection and analyses report of Cofrentes Nuclear Power Plant. Task 1-2 of Project SSHAC Level 3 Probabilistic Seismic Hazard analysis for nuclear power plant sites in Spain. INEX-FO-18-002949-00044. Iberdrola S.A. PI: Kathryn Hanson (KlHanson Consulting LLC).

Scientific Consultancy – Hanson K., Gutiérrez, F., Carbonel, D. Karampaglidis, T., **Sevil, J.** (2018). New data collection and analyses report of Trillo Nuclear Power Plant. Task 1-2 of Project SSHAC Level 3 Probabilistic Seismic Hazard analysis for nuclear power plant sites in Spain. INEX-FO-18-002949-00044. Iberdrola S.A. PI: Kathryn Hanson (KlHanson Consulting LLC).

Contract – “Análisis morfo-tectónico de las fallas de Ruesta y La Magdalena, Aragón”. (Morpho-tectonic analysis of the Ruesta and La Magdalena faults, Aragon). Geoalcali S.L. PI: Francisco Gutiérrez (University of Zaragoza). May – July 2018. 12,000€.

CONGRESSES

Sevil-Aguareles, J., Gutiérrez, F., Benito-Calvo. Comparing terrestrial laser scanner and ground-based structure from motion photogrammetry for sinkhole characterization and strain monitoring in an urban area. Geo-INQUIRE Corinth Summer School 2024. October 21-25, 2024. Corinth, Greece. Oral and poster presentation.

Sevil, J., Gutiérrez, F. Temporal variability of sinkhole hazard assessed by means of multi-temporal mapping in the western shore of the Dead Sea. X AIGeo Italian Young Geomorphologists’ Day and III IAG International Young Geomorphologists’ Meeting. March 1-2, 2024, Venice, Italy. Oral presentation.

Sevil, J., Gutiérrez, F. “Cartografía multitemporal de dolinas y variabilidad de la peligrosidad asociada en la costa oeste del Mar Muerto” (Multitemporal sinkhole mapping and variability of the related hazard on the western shore of the Dead Sea). “XVI Reunión Nacional de Geomorfología de la Sociedad Española de Geomorfología (SEG)” (16th National Meeting on Geomorphology of the Spanish Geomorphological Society, SEG). September 6-8, 2023, Zaragoza, Spain. Oral and poster presentation.

Sevil, J. Multitemporal sinkhole mapping on the western shore of the Dead Sea. Implications for spatial prediction and basis for hazard assessment. International Association of Geomorphologists (IAG) Webinar of Southern Europe. IAG - International Association of Geomorphologists. 2023. Invited talk.

Sevil, J., Gutiérrez, F. Morphometry, distribution, and evolution of sinkholes on the western shore of the Dead Sea. 10th IAG's International Conference on Geomorphology. Geomorphology and Global Change. September 12-16, 2022, Coimbra, Portugal. Oral presentation.

Sevil, J., Melis, M.T., Pisani, L., De Waele, J. "Le grandi doline di crollo nel plateau basaltico di Azrou (Marocco): un'analisi morfometrica" (The large collapse sinkholes in the basaltic plateau of Azrou (Morocco): a morphometric analysis). "XXIII Congresso Nazionale di Speleologia" (23rd National Congress of Speleology). June 2-5, 2022, Ormea, Italy. Poster.

Sevil, J., Gutiérrez, F., Carbonel, D., Desir, G., Guerrero, J., Fabregat, I., García-Arnay, A., Mantovani, J. Characterizing and monitoring a damaging sinkhole in an urban area using non-invasive techniques: high-precision leveling and GPR Mantled evaporite karst of Zaragoza city, Spain. IAG's Regional Conference on Geomorphology. Geomorphology of Climatically and Tectonically Sensitive Areas. September 19-21, 2019, Athens, Greece. Oral presentation.

FURTHER TRAINING

- Strain mapping for the characterization and prevention of geohazard events. 20.5 h. Geo-INQUIRE Corinth Summer School 2024, Corinth, Greece. 25/10/2024
- Remote Sensing and Image Spectrometry in Earth Sciences ("Teledetección y espectrometría de imágenes en las Ciencias de la Tierra"). 22 h. Cursos Extraordinarios Universidad de Zaragoza, University of Zaragoza. 12/07/2024
- The Teaching Roles in the University Context ("Las funciones del y la docente en el contexto universitario"). 12 h. "Centro de Innovación, Formación e Investigación en Ciencias de la Educación (CIFICE)", University of Zaragoza. 26/10/2022.
- Pedagogical Training Course for New University Teachers ("Curso de Formación Pedagógica para el Profesorado Universitario Novel"). 25 h. "Instituto de Ciencias de la Educación", University of Zaragoza. 14/04/2021.
- Spatio-temporal Modelling of Geo-Environmental Processes in R ("Modelado espacio-temporal de procesos geoambientales en R"). 12 h. University of Zaragoza. 24/02/2020.
- Introductory course to R ("Curso de introducción a R"). 12 h. University of Zaragoza. 05/12/2018.

SPELEOLOGICAL EXPERIENCE

Beginners course (2012), Formation (2013), Installation of caves (2015) and Self rescue (2016) at the 'Centro de Espeleología de Aragón' and the 'Federación Aragonesa de Espeleología'.

Participation in exploration campaigns in the central Pyrenees ('Sistema Secús' and 'Sistema Lecherines', Aragón, Spain).

Collaboration in caving rescue practice in the 'T1-Santa Elena' traverse ('Sistema Arañonera', Aragón, Spain). Participation in the installation of temperature sensors in the traverse B15 - B1 ('Sistema Fuentes de Escuaín', Aragón, Spain).

Participation in the activities organized by Italian speleologists of the 'Gruppo Speleologico di Bologna' in the regional park 'Vena del Gesso Romagnola' (Italy) during my research stay at the University of Bologna, Italy (Mar – May 2022).

REFEREES

Dr. Francisco Gutiérrez Santolalla (PhD Supervisor) Dept. of Earth Sciences, University of Zaragoza, Zaragoza, 50009 Spain
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Dr. Alfonso Benito Calvo (2nd PhD Supervisor) CENIEH, Paseo Sierra de Atapuerca 3, Burgos, 09002 Spain
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FURTHER INFORMATION

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Google Scholar <https://scholar.google.es/citations?user=G8NPs30AAAAJ&hl=es>