Javier **Elío**

Researcher | Environemntal sciences | Geoinformatics

Haugesund (Norway)

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Expert on environmental research, statistics, spatial data analysis, and modelling

Career Summary

I am an Engineer from the Technical University of Madrid (Spain) with 10+ years of research and teaching experience. I have done an MSc in Environmental Research, Modelling and Risk Assessment, and a PhD in Earth Science. My main research area is environmental science, with a particular interest in radon as a natural hazard. My prior experience is in soil pollution, hydrocarbon exploration, fractured media characterization and geological storage of CO_2. Recently, I have started a postdoc in Geoinformatics on Migration Modelling at Aalborg University (Denmark). I am collaborating with the research group of Applied Marine Microbiology at Høgskulen på Vestlandet (Norway), where I have presented several projects for funding to the Norwegian Research Council, NordForsk, and the European Commission (Marie Sklodowska-Curie).

My research interests are:

- Environmental risk assessment
- Statistics, spatial data analysis, and geostatistics
- Geographic information systems
- R language

Education

2009-13 **Ph.D. in Environmental Science**, Technical University of Madrid, Madrid, ES

2007-09 **M.Sc. in Environmental Research, Modelling and Risk Assessment**, Technical University of Madrid, Madrid, ES

1998-05 **M.Eng. in Mining Engineering. Specialization: Natural Resources and Environment Management**, Technical University of Madrid, Madrid, ES

Experience

2020 **Postdoc**, Aalborg University, Copenhagen, DK

2019-19 **Assistant Professor**, Western Norway University of Applied Sciences, Haugesund, NO

2016-18 **Postdoctoral Research Fellow**, Trinity College Dublin, Dublin, IE

2014-14 **Research Assistant**, Technical Universityof Madrid, Madrid, ES

2009-13 **PhD Candidate**, Fundación Ciudad de la Energía, Ponferrada, ES

2007-09 **Research assistant**, Technical University of Madrid, Madrid, ES

2005-07 **Tunnel Engineer**, Obrascon Huarte Lain SA, Madrid, ES

Invited Positions

2018-18 **Visiting Research Assistant**, Trinity College Dublin, Dublin, IE

2013-13 **Research Stay**, University of Florence, Florence, IT

Professional memberships

2019 **Applied Marine Microbiology**, Western Norway University of Applied Sciences, Haugesund, NO

2017 **European Commission - Joint Research Centre**, European Geogenic Radon Map expert group, Ispra, IT

2016 **European Radon Association**, Brussels, BE

Professional Services

2019-19 **Expert**, International Atomic Energy Agency, Vienna, AT
2018-18 **Expert**, International Atomic Energy Agency, Vienna, AT
2018-18 **Expert**, International Atomic Energy Agency, Vienna, AT
2018-18 **Expert**, European Commission - Joint Research Centre, Ispra, IT

Funding projects

2017-18 **An All-Ireland Geogenic Indoor Radon Map**, Geological Survey Ireland, Dublin, IE
2016-17 **Radon monitoring and hazard prediction in Ireland**, Irish Research Council - Enterprise Partnership Scheme Fellowship 2015, Dublin, IE

Honours and Awards

2019 **Roland Schlich Early Career Scientist's Travel Support grant**, European Geosciences Union, Vienna, AT
2019 **European Radon Association Award**, European Radon Association, Brussels, BE
2016 **Extraordinary PhD Award**, Technical University of Madrid, Madrid, ES
2014 **Gómez-Pardo Foundation Award**, Spanish Royal Academy of Doctors, Madrid, ES
2012 **International Mobility Program Grant**, Social Council at the Technical University of Madrid, Madrid, ES
2009 **Doctoral Research Grant**, Ciudad de la Energía Foundation, Ponferrada, ES

Teaching Experience

Lectures/Seminars

2018 **Teaching assistant**, 10 day geological residential field-school in SE Spain, Trinity College Dublin, School of Natural Sciences, Geology, Dublin, IE
2017 **GIS module in MSc Environmental Science**, Lecture: A new indoor radon risk map of Ireland. Geology, School of Natural Sciences, Trinity College Dublin, School of Natural Sciences, Geology, Dublin, IE
2016 **Michaelmas Semester 2016 - Geology Seminar Series**, Modelling Indoor Radon Concentration: Towards a High-Resolution Indoor Radon Map of Ireland, Trinity College Dublin, School of Natural Sciences, Geology, Dublin, IE
2016 **Teaching assistant**, 10 day geological residential field-school in SE Spain, Trinity College Dublin, School of Natural Sciences, Geology, Dublin, IE
2013 **Summer school in Carbon Capture and Storage**, Surface and subsurface monitoring of a CO2 storage site: theory and practice, University of León, Ponferrada, ES

Supervision

2017 **Co-supervisor of a Master thesis in Environmental Sciences**, Assessing the contribution of Quaternary deposits to the soil radon budget in Ireland, Trinity College Dublin, School of Natural Sciences, Geology, Dublin, IE
2017 **Co-supervisor of an Earth Science Dissertation**, Evaluating two techniques of soil gas radon detection in application, performance and against indoor radon concentrations, Trinity College Dublin, School of Natural Sciences, Geology, Dublin, IE
2016 **Co-supervisor of a Master thesis in Environmental Sciences**, Linking radon concentrations between the natural and built environments, Trinity College Dublin, School of Natural Sciences, Geology, Dublin, IE

PhD Examiner

2017 **External PhD examiner**, Thesis: "Integration of remote sensing and statistical techniques for detecting CO2 leaks in geological storage areas through the study of natural analogues, Miguel A. Rincones Salinas, Technical University of Madrid, Madrid, ES

Publications

I have published **22** peer-reviewed journal articles, chapters or books on Environmental Science topics. I have also presented my research at 4 invited talks, and in several national and international conferences.

Peer reviewed articles

2020 Bossew, P., Cinelli, G., Ciotoli, G., Crowley, Q.G., de Cort, M., **Elío**, J., Gruber, V., Petermann, E., Tollefsen, T., Development of a geogenic radon hazard index—concept, history, experiences, International Journal of Environmental Research and Public Health, http://dx.doi.org/10.3390/ijerph17114134

2020 Javier **Elío**, Quentin Crowley, Ray Scanlon, Jim Hodgson, Stephanie Long, Mark Cooper, Vincent Gallagher, Application of airborne radiometric surveys for large-scale geogenic radon potential classification, Journal of the European Radon Association, http://dx.doi.org/10.35815/radon.v1.4358

2020 Namrata Kaile, Mathilde Lindivat, Javier **Elío**, Gunnar Thuestad, Quentin G. Crowley, Ingunn Alne Hoell, Preliminary Results From Detection of Microplastics in Liquid Samples Using Flow Cytometry, Frontiers in Marine Science, http://dx.doi.org/10.3389/fmars.2020.552688

2019 Nisi, B., Vaselli, O., **Elío**, J., Giannini, L., Tassi, F., Guidi, M., Darrah, T.H., Maletic, E.L., Delgado Huertas, A., Marchionni, S., The Campo de Calatrava Volcanic Field (central Spain): Fluid geochemistry in a CO2-rich area, Applied Geochemistry, http://dx.doi.org/10.1016/j.apgeochem.2019.01.011

2019 **Elío**, J., Crowley, Q., Scanlon, R., Hodgson, J., Long, S., Rapid radon potential classification using soil-gas radon measurements in the Cooley Peninsula, County Louth, Ireland, Environmental Earth Sciences, http://dx.doi.org/10.1007/s12665-019-8339-4

2019 **Elío**, J., Cinelli, G., Bossew, P., Gutiérrez-Villanueva, J.L., Tollefsen, T., De Cort, M., Nogarotto, A., Braga, R., The first version of the Pan-European Indoor Radon Map, Natural Hazards and Earth System Sciences, http://dx.doi.org/10.5194/nhess-19-2451-2019

2018 De Miguel, E., Barrio-Parra, F., **Elío**, J., Izquierdo-Díaz, M., García-González, J.E., Mazadiego, L.F., Medina, R., Applicability of radon emanometry in lithologically discontinuous sites contaminated by organic chemicals, Environmental Science and Pollution Research, http://dx.doi.org/10.1007/s11356-018-2372-9

2018 Barrio-Parra, F., **Elío**, J., De Miguel, E., García-González, J.E., Izquierdo, M., Álvarez, R., Environmental risk assessment of cobalt and manganese from industrial sources in an estuarine system, Environmental Geochemistry and Health, http://dx.doi.org/10.1007/s10653-017-0020-9

2018 **Elío**, J., Crowley, Q., Scanlon, R., Hodgson, J., Zgaga, L., Estimation of residential radon exposure and definition of Radon Priority Areas based on expected lung cancer incidence, Environment International, http://dx.doi.org/10.1016/j.envint.2018.02.025

2017 **Elío**, J., Crowley, Q., Scanlon, R., Hodgson, J., Long, S., Logistic regression model for detecting radon prone areas in Ireland, Science of the Total Environment, http://dx.doi.org/10.1016/j.scitotenv.2017.05.071

2016 **Elío**, J., Ortega, M.F., Nisi, B., Mazadiego, L.F., Vaselli, O., Caballero, J., Chacón, E., A multi-statistical approach for estimating the total output of CO2 from diffuse soil degassing by the accumulation chamber method, International Journal of Greenhouse Gas Control, http://dx.doi.org/10.1016/j.ijggc.2016.02.012

2015 **Elío**, J., Ortega, M.F., Nisi, B., Mazadiego, L.F., Vaselli, O., Caballero, J., Quindós-Poncela, L.S., Sainz-Fernández, C., Pous, J., Evaluation of the applicability of four different radon measurement techniques for monitoring CO2 storage sites, International Journal of Greenhouse Gas Control, http://dx.doi.org/10.1016/j.ijggc.2015.06.021

2015 **Elío**, J., Ortega, M.F., Nisi, B., Mazadiego, L.F., Vaselli, O., Caballero, J., Grandia, F., CO2 and Rn degassing from the natural analog of Campo de Calatrava (Spain): Implications for monitoring of CO2 storage sites, International Journal of Greenhouse Gas Control, http://dx.doi.org/10.1016/j.ijggc.2014.10.014

2014 Llamas, B., Mazadiego, L.F., **Elío**, J., Ortega, M.F., Grandia, F., Rincones, M., Systematic approach for the selection of monitoring technologies in CO2 geological storage projects. application of multicriteria decision making, Global Nest Journal, http://dx.doi.org/10.30955/gnj.001241

2014 Ortega, M.F., Rincones, M., **Elío**, J., Del Olmo, G.J., Nisi, B., Mazadiego, L.F., Iglesias, L., Vaselli, O., Grandia, F., García, R., De La Vega, R., Llamas, B., Gas monitoring methodology and application to CCS projects as defined by atmospheric and remote sensing survey in the natural analogue of campo de Calatrava, Global Nest Journal, http://dx.doi.org/10.30955/gnj.001242

2014 Nisi, B., Vaselli, O., Tassi, F., **Elío**, J., Ortega, M., Caballero, J., Rappuoli, D., Mazadiego, L.F., Origin of the gases released from the Acqua Passante and Ermeta wells (Mt. Amiata, central Italy) and possible environmental implications for their closure, Annals of Geophysics, http://dx.doi.org/10.4401/ag-6584

2013 Vaselli, O., Nisi, B., Tassi, F., Darrah, T., Bruno, J., **Elío**, J., Grandia, F., Del Villar, L.P., Gas Discharges for Continental Spain: Geochemical and Isotopic Features, Mineralogical Magazine, http://dx.doi.org/10.1180/minmag.2013.077.5.22

2013 Nisi, B., Vaselli, O., Tassi, F., **Elío**, J., Huertas, A.D., Mazadiego, L.F., Ortega, M.F., Hydrogeochemistry of surface and spring waters in the surroundings of the CO2 injection site at Hontomín-Huermeces (Burgos, Spain), International Journal of Greenhouse Gas Control, http://dx.doi.org/10.1016/j.ijggc.2013.01.012

2013 **Elío**, J., Nisi, B., Ortega, M.F., Mazadiego, L.F., Vaselli, O., Grandia, F., CO2 soil flux baseline at the technological development plant for CO2 injection at Hontomin (Burgos, Spain), International Journal of Greenhouse Gas Control, http://dx.doi.org/10.1016/j.ijggc.2013.07.013

2012 **Elío**, J., Ortega, M.F., Chacón, E., Mazadiego, L.F., Grandia, F., Sampling strategies using the "accumulation chamber" for monitoring geological storage of CO2, International Journal of Greenhouse Gas Control, http://dx.doi.org/10.1016/j.ijggc.2012.04.006

Book chapters

2019 European Commission, Joint Research Centre – Cinelli, G., De Cort, M., Tollefsen, T. (Eds.): European Atlas of Natural Radiation, Publication Office of the European Union, Luxembourg, 2019. ISBN 978-92-76-08259-0, Catalogue number KJ-02-19-425-EN-C, EUR 19425 EN. Printed by Bietlot in Belgium 2019 – 190 pp. – 30.1 cm— 42.4 cm, http://dx.doi.org/10.2760/520053.

2016 **Elío**, J., Ortega, M.F., Mazadiego, L.F., Nisi, B., Vaselli, O., Garcia-Martinez, M.J., Monitoring of soil gases in the characterization stage of CO2 storage in saline aquifers and possible effects of CO2 leakages in the groundwater system, Geologic Carbon Sequestration: Understanding Reservoir Behavior, http://dx.doi.org/10.1007/978-3-319-27019-7_5