

## CURRICULUM VITAE ABREVIADO (CVA)

**IMPORTANT** – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

### Part A. PERSONAL INFORMATION

First name	Francisco José		
Family name	Rueda Valdivia		
Gender (*)	Male	Birth date	
Social Security, Passport, ID number			
e-mail	fjrueda@ugr.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)	0000-0002-2803-3440		

(\*) Mandatory

#### A.1. Current position

Position	Professor ("Catedrático de Universidad")		
Initial date	27/12/2017		
Institution	Universidad de Granada		
Department/Center	Civil Engineering		
Country	Spain	Teleph. number	606717963
Key words	Environmental Fluid Mechanics, Physical Limnology, Numerical modelling of transport and mixing processes, Water Quality Modelling, Hydrology		

#### A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
20/10/2011-26/12/2017	Assistant Professor ("Profesor Titular de Universidad") - Dept. Civil Engineering – Universidad de Granada, Spain
28/12/2007-19/10/2011	Assistant Professor ("Profesor Contratado Doctor") - Dept. Civil Engineering – Universidad de Granada, Spain
1/05/2003-27/12/2007	Research Associate (Programa "Ramón y Cajal") – Dept. Civil Engineering – Universidad de Granada, Spain
01/08/2002-30/04/2003	School of Civil and Environmental Engineering – Cornell University, USA
01/03/2001-31/08/2001	Visiting Postdoctoral Research Associate – National Center for Computational Hydro-science & Engineering Univ. Mississippi, Oxford, USA
01/01/2001-31/07/2001	Postgraduate Research Engineer Dept. Civil & Environmental Engineering Univ. California Davis USA

#### A.3. Education

PhD, Licensed, Graduate	University/Country	Year
BSc, Agricultural Engineering ("Ingeniero Agrónomo")	Universidad de Córdoba, Spain	1993
Master of Science, MSc Civil & Environmental Engineering	Univerisity of California (Davis), USA	2000
Phd, Civil & Environmental Engineering	University of California (Davis), USA	2001

(Include all the necessary rows)

**Part B. CV SUMMARY** (max. 5000 characters, including spaces)

**61** SCI publications (mostly Q1); total citations 2114 (812 since 2018, Source: Google Scholar); h-index: 29 (16 since 2018, Source: Google Scholar); i10-index: 53 (29 since 2018, Source Google Scholar). 5 "sexenios" (the last one awarded in 2022, one of them "sexenio de transferencia"). He has contributed to more than 80 research presentations in a wide range of scientific conferences. He has presented seminars and invited speeches in well-recognized research institutions including Stanford University, United States Geological Survey, or the Swiss Federal Institute for Water Science and Technology EAWAG. He has participated in more than 20 research projects and contracts, in 15 of them as Principal Investigator PI, funded by national and international government agencies and companies, including Spanish Ministry of Science, US National Science Foundation, U.S. Army Corps of Engineers, US Bureau of Reclamation, or, the US Geological Survey. He actively collaborates with researchers from laboratories and institutions around the world in the area of Environmental Fluid Mechanics (UCDavis, UCSanta Barbara, Stanford & Cornell University, Virginia Tech), Ecology and Physics. His modelling work, through contracts with water companies and government agencies, has been used to support impact assessment studies of engineering structures and devices in environmental water systems, and helped to guide their course of action. It has been used to support outreach activities in trying to make others understand the importance of water motion in lakes and reservoirs. He is currently one of the 'guarantors' for the area of Computational Hydraulics in the PhD program in Civil Engineering of the University of Granada.

He has served as an external reviewer for the University of California-Davis, in their internal contracting processes for research personnel. Reviewer of research proposals for U.S. National Science Foundation, "Agencia Nacional de Evaluación y Prospectiva" and "Fundación BBVA". Member of the Editorial Committee of the journal LIMNÉTICA, sponsored by the Iberian Association for Limnology and indexed in the area of LIMNOLOGY in the JCR (2009-2016). Member of the Management Committee of Lake and Reservoir Management Specialist Group del International Water Association (since 2010 a 2014). Since January 2015 until 2019, he acted as Associate Editor for LIMNOLOGY and OCEANOGRAPHY, of the Association for the Sciences of Limnology and Oceanography, a scientific journal that is ranked first in the area of LIMNOLOGY in JCR. He has chaired the Organizing Committee of the 10th International Workshop of Physical Processes in Natural Waters, Granada, June, 2006, and the Organizing Committee of the 2nd IWA Symposium on Lake and Reservoir Management, celebrated in Granada (June 2011), the latter being funded by "Ministerio de Ciencia e Innovación -Subprograma de Acciones Complementarias-Plan Nacional de I+D+i 2008-2011", and the US Army Corps of Engineers. During that Symposium a workshop was organized on in-situ water quality management techniques, imparted by international researchers.

Since 2007, when he started his teaching duties at the Univ. of Granada, he has been involved in supervising young researchers. He currently teaches 'Environmental Engineering for Water Quality' in the Civil Engineering Program at the Univ. of Granada, "Hydrologic Processes" and "Water Quality Modelling" in the MSc Program on Technologies and Sciences for Water Quality (Univ. of Granada), and 'Simulation and Analysis of Systems in Environmental Engineering' in the MSc Program "Ingenieros de Caminos Canales y Puertos". He has supervised 5 doctoral dissertations at the University of Granada, and served in the PhD Committee of three PhDs in the Universities of California-Davis, and Virginia Tech. He has had nearly 30 MSc students working under his supervision, and five postdoctoral researchers, under several contracts. His post-graduate students (MSc, PhD and post-docs) are now working (or have worked) as research associates at the Univ. Adelaida (Australia, Anna Rigosi), Univ. California Santa Barbara (USA, J. Vidal and A. Cortés), University of California Davis (USA, A. Cortés), Swiss Federal Institute for Water Science and Technology EAWAG (C. Ramón), Electricité de France (J. Vidal), TÜV Rheinland Energy (Germany, A. Hoyer), or, Inha University in Tashkent (Uzbekistan, B. Azhmedov). Currently, he has 3 PhD student working under his supervision at the Univ. of Granada, and two post-doctoral research associates.

## Part C. RELEVANT MERITS (sorted by typology)

### C.1. Publications (30 SCI during the last 10 years)

- 1) Toledo, J, V. Singleton, J.C. Little, G. Lawrence, C. Ramón and **F.J. Rueda** (2021). Fate of artificially injected oxygen in the hypolimnion of a multi-basin lake: Amisk Lake, Canada, revisited. *Water Resources Research*. <https://doi.org/10.1029/2020WR028840>
- 2) Ramón, C.L., M. Priet-Mahéo, **F.J. Rueda** & H. Andradottir (2020) Inflow dynamics in weakly stratified lakes near the Arctic Circle subject to large vertical displacement internal waves. *Water Resources Research*. <https://doi.org/10.1029/2019WR026578>
- 3) Suarez-Rey E., C. Gimenez, M. Romero-Gámez, M. Gallado and **F.J. Rueda** (2019). Sensitivity and uncertainty analysis in agro-hydrological modelling of drip fertigated lettuce crops under Mediterranean conditions. *Computers and Electronics in Agriculture*, **Volume 162**, pp. 630-650. <https://doi.org/10.1016/j.compag.2019.05.011>.
- 4) Ramón, C.L., M. Acosta and **F.J. Rueda** (2018). Hydrodynamic Drivers of Juvenile-Salmon Out-Migration in the Sacramento River: Secondary Circulation. *J. Hydraul. Eng.*, 2018, 144(8): 04018042. DOI: 10.1061/(ASCE) HY.1943-7900.0001484.
- 5) Yeste, P. Dorador, J., W. Martin, M. J. Esteban, and **F. J. Rueda** (2018). Climate-driven trends in the streamflow records of a reference hydrologic network in Southern Spain. *Journal of Hydrology*, **566**, pages 55-72. <https://doi.org/10.1016/j.jhydrol.2018.08.063>
- 6) Priet-Mahéo, M, C. L. Ramón, **F.J. Rueda** & H. Andradottir (2018). Mixing and internal dynamics of a medium-size and deep lake near the Arctic Circle. *Limnology and Oceanography*, doi: [10.1002/lno.11019](https://doi.org/10.1002/lno.11019).
- 7) Bruce, L.C. and others (2018). A multi-lake comparative analysis of the General Lake Model 1 (GLM): Stress-testing across a global observatory network. *Environmental Modelling and Software*, 102:274-291. <https://doi.org/10.1016/j.envsoft.2017.11.016>
- 8) Cortés, A., M.G. Wells, O.B. Fringer, R.S. Arthur, and **F.J. Rueda** (2015). Numerical investigation of split flows by gravity currents into two-layered stratified water bodies. *Journal of Geophysical Research: Oceans*, 120, 5254-5271, doi: 10.1002/2015JC010722.
- 9) Hoyer, A. B., S.G. Schladow & **F.J. Rueda** (2015) Local dispersion of nonmotile invasive bivalve species by wind-driven lake currents. *Limnology and Oceanography*, 60(2), 446-462. doi: 10.1002/lno.10046.
- 10) Ramón, C. L., J. Prats, J. Armengol, J. Dolz & **F.J. Rueda** (2014). Mixing dynamics at the confluence of two large rivers undergoing weak density variations *Journal of Geophysical Research-Oceans*, 119, doi: 10.1002/2013JC009488.

### C.2. Congress, (18 contributions to International Conferences in the last 10 years)

- (1) B. B. Ahmedov, **F.J. Rueda**, P. González and D. Barrera. Two- and three time-level, semi-implicit models for the numerical solution of the three-dimensional shallow water equations. Oral presentation. 5th International Conference on Approximation Methods and Numerical Modelling in Environment and Natural Resources (MAMERN2013). Granada, Spain. April 22 - April 25, 2013
- (2) A. B. Hoyer, S. G. Schladow and **F.J. Rueda** . A hydrodynamic-based approach to evaluating the risk of waterborne pathogens entering drinking water intakes in lakes and reservoirs. Oral presentation. 2015 Aquatic Sciences Meeting (ASLO). Granada, Spain. February 22 - 27, 2015
- (3) Ramón, C.L., Burau, J., Acosta, M., Blake, A., and **Rueda, F. J.** TITULO: Effect of secondary circulation and fish entrance distribution on entrainment of juvenile salmon into the interior Sacramento-San Joaquin River Delta over a tidal cycle (Poster). European Geosciences Union General Assembly 2017. April 23-28 2017 Vienna (Austria)
- (4) Ramón, C. L., **Rueda, F.J.**, Priet-Mahéo, M. C. and Andradóttir, H. Ó. Human-induced changes in lake forcing: the impact of the Kárahnjúkar hydroelectric scheme in the hydrodynamics of Lake Lagarfljót (oral presentation). 21st International Workshop on Physical Processes in Natural Waters (PPNW, 2018). August 20-24 2018 Solothurn (Switzerland).

### C.3. Research projects, (8 in the last 10 years, 4 as Principal Investigator)

- 1.- "Co-design of adaptation strategies for a sustainable management of water resources in semi-arid Mediterranean alpine basins. Integrating potential climate change impacts on water quantity and quality". Proyectos Orientados a la Transición Ecológica y Digital 2021. Reference: TED2021-130744B-C22 (1/12/2022-30/11/2024). PI: David Pulido Velázquez (CSIC-IGME). Co-PI: **F.J. Rueda (UGR)**. Budget (UGR): 149.500,00 €.
- 2.- "The contribution of Space-Time variability of ebullitive and diffusive fluxes to the Uncertainty in Methane emission estimates from Mediterranean Reservoirs (COSTUMER)". P21\_00238. Plan Andaluz de Investigación, Desarrollo e Innovación: Programa de Ayudas a Proyectos de I+D+i. (2023-2025). PI: Cintia L. Ramón-Casañas. Budget: 191.430,00 €.
- 3.- Observatorio para el registro en continuo e interpretación de emisiones de gases de efecto invernadero en embalses Mediterráneos (O-GEI). Reference: EQC2019-005868-P. Funded by Ministerio de Ciencia, Innovación y Universidades (Programa de Ayudas para infraestructuras y equipamiento Científico-Técnico del Plan Estatal de I+D 2019 (2019-2020). **PI: Francisco J. Rueda**. Budget: 245.156,00 €.
- 4.- Variabilidad CiRcadiana, estaciOnal y climática en las emisioNes de gases de efecto invernadero en embalses mediterráneos: reguladores físicos y biogeoquímicos (CRONOS) (2019-2022): RTI2018-098849-B-I00. Funded by Ministerio de Ciencia, Innovación y Universidades (Programa Estatal de I+D+i Orientada a los Retos de la Sociedad CONVOCATORIA 2018). PI: Isabel Reche Cañabate, Co-IP: **Francisco J. Rueda** (Univ. Granada). Budget: 102.850,00 €.
- 5.- Balance de metano en aguas anóxicas y óxicas de un embalse eutrófico. B-RNM-558-UGR20 Proyectos I+D+i del Programa Operativo FEDER 2020. PI: Isabel Reche Cañabate, Co-IP: **Francisco J. Rueda** (Univ. Granada). Budget: 35.000,00 €.
- 6.- Impacto del cambio climático en la cuenca del Guadalquivir (LICUA) Ref.: P11-RNM-7941. Proyecto de Excelencia de la Junta de Andalucía. Consejería de Innovación, Ciencia y Empresa. Secretaria General de Universidades, Investigación y Tecnología. (2013- 2018). PI: María Jesús Esteban Parra. Budget: 178.396,05 €
- 7.- Variabilidad de los flujos de solutos inducidos por la dinámica de la interfase agua-sedimento: implicaciones para la calidad de las aguas y los ecosistemas (CTM2011-2014). Funded by Ministerio de Ciencia e Innovación (2012-2015). PI: Elena Sánchez-Badorrey
- 8.- Managing oxygen demand in lakes and reservoirs - a competition between natural and artificial forcing. Funded by United States National Science Foundation NSF (2011-2013). PI: Scott A. Socolofsky, Texas A&M University, USA and J. C. Little, Virginia Tech, USA.

### C.4. Contracts, technological or transfer merits,

1. Using Engineered DNA to Assess Spatial and Temporal Variation in eDNA as a Measure of the Temporal and Spatial Variation of Biodiversity. Contract OTRI C4767-00). Funded by United States Army Corps of Engineers USACE through subcontract with Cornell University USA (1-1-2021 a 19-9-2023). **PI: Francisco J. Rueda**. Budget: 83.660,00 \$
- 2.- Numerical simulations and flow visualization in Lake Tahoe (Contract OTRI C4159-00). Funded by Lake Tahoe Env. Research Center (2014-2016). **PI: Francisco J. Rueda (UGR)**. Budget: 18.778,00 €. From: 01/07/2014-30/07/2016.
- 3.- Impact of hydropower damming on the physics of sub-arctic lakes. Funded by Energy Fund of the National Power Company in Iceland (Icelandic: Orkurannsóknaþjófur Landsvirkjunar) through the University of Iceland. Contract FEUGR (C4334-00) with University of Granada & OTRI (C3958). Budget: 23.074,95 € (C4334-99) y 17.259,80€ (C3958). From 01/10/2016 to 31/12/2017 (C4334-00) and from 04/04/2018 to 30/06/2018 (C3958). **PI: Francisco J. Rueda (UGR)**.
- 4.- Modelling the effects of mat covers on reservoir dynamics. Funded by Lake Tahoe Env. Research Center (University of California, Davis, USA), S. Geoffrey Schladow, Director. Contract FEUGR (C4729-00). Budget: 6.000,00 \$. From 16/04/2016 to 30/09/2016. **PI: Francisco J. Rueda (UGR)**.
- 5.- Desarrollo de un protocolo de actuación para la optimización hidráulica y energética de reactores biológicos de fangos activos. Funded by: Empresa Municipal de Abastecimiento y Saneamiento de Granada, S.A. Contract OTRI (C4314-00). Budget: 19.756,80 €. From 01/07/2016 to 30/06/2017. **PI: Francisco J. Rueda (UGR)**