

CARMELO JUEZ JIMÉNEZ

INDUSTRIAL ENGINEER

+ CONTACT

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Nationality Spanish
Date of birth January 21, 1986 (29 years old)



+ EDUCATION

Oct. 2011 – May. 2014 **PhD**
University of Zaragoza Thesis title: *Development of robust, physically-based numerical models for transport processes and geomorphodynamic changes*
Zaragoza (Spain) <http://zaguan.unizar.es/record/15604>

Oct. 2011 – Jun. 2012 **MSc Degree in Applied Mechanics**
University of Zaragoza Award to the best MSc Thesis
Zaragoza (Spain) Main topics: Mechanical Engineering for solid and fluids
Computational techniques

Oct. 2010 – Sept. 2010 **Postgraduate studies in Water Resources Engineering**
Online studies Main topics: Water in agriculture, industry and urban areas.
Spain Management and challenges

Sept. 2004 – Mar. 2010 **Industrial Engineer**
University of Zaragoza Award from the Federal Chamber of Commerce by its internship
Zaragoza (Spain) in a local company
Main topics: Civil engineering, energy, industrial processes,
solid mechanics, fluid mechanics

LANGUAGES

Fluent Spanish (mother tongue), English
Knowledge French

IT. SKILLS

Operating systems Windows and Linux
Knowledge Office, Fortran, C, Latex, Gnuplot, Paraview, Tecplot, CFD, CAD

+ WORK EXPERIENCE

April 2014–Currently **Postdoc**
Laboratoire de Constructions Définition of new experiments on turbidity currents and study of
Hydrauliques morphological changes in reservoirs and in the vicinity of man-made
EPFL, Lausanne, Switzerland structures due to the transfer of fine sediments by turbidity currents.

- Nov. 2014–March 2014 **Postdoc**
 Fluid Mechanics Group
 University of Zaragoza
 Developing models for the evaluation of sediment transport with non-uniform grain mixtures in river simulations home codes.
- Jun. 2014–October 2014 **Postdoc research stay**
 Hydraulics Group
 Université Catholique de Louvain (Belgium)
 Laboratory studies about sediment transport over steep and slopes. Comparison with numerical models.
- Oct. 2010 – May 2014 **PhD. student**
 Fluid Mechanics Group
 University of Zaragoza
 Zaragoza (Spain)
 Developing models for the evaluation of sediment transport in CFD river simulations home codes.
 Developing models for mud floods with complex rheology and design of experiments for their verification.
- Abr. 2010 – Sept. 2010 **Research assistant**
 Aragón Institute of Eng. Research (I3A)
 Zaragoza (Spain)
 Optimizing the design of fluidized bed reactors based on computational results.

+ RESEARCH AND DEVELOPMENT ACTIVITIES

- Jan. 2013 – Currently **Research collaborator**
 Sediment transport/Mud flow developer for HYDRONIA company: <http://www.hydronia.net/>
- Jan. 2012 – Currently **Research collaborator**
 Grant from the Regional government.
 T21 COMPUTATIONAL FLUID MECHANICS GROUP
- Jan. 2011 – Dec. 2014 **Research collaborator**
 Grant from Ministry of Education. CGL2011-28590.NUMERICAL SIMULATION OF GRANULAR GEOPHYSICAL FLOWS AND THEIR IMPACT AGAINST WATER RESERVOIR
- Aug. 2014 – Oct. 2014 **Research collaborator**
 Specific analysis of sediment transport for the company GOLDER ASSOCIATES GLOBAL IBERICA, S.L.U.
- Dec. 2011 – Mar. 2012 **Research collaborator**
 Specific analysis of mud flows for the company GOLDER ASSOCIATES GLOBAL IBERICA, S.L.U.
- Oct. 2010 – Dec. 2012 **Research collaborator**
 Grant from Ministry of Industry. CENIT 2009 - TECOAGUA – DEVELOPMENT OF SUSTAINABLE MANAGEMENT OF WATER RESOURCES.

+ PUBLICATIONS IN SCIENTIFIC JOURNALS

- A. Lacasta, **C. Juez**, J. Murillo, P. García-Navarro. *Implementation on GPU of transient geophysical flows*. . COMPUTERS AND GEOSCIENCES. 2014. DOI:10.1016/j.cageo.2015.02.010.

- D. Caviedes-Voullième, **C. Juez**; J. Murillo, P. García-Navarro. *Experimental study of 2D granular flow over a complex topography with obstacles using a consumer-grade 3 RGB-D sensor*. COMPUTERS AND GEOSCIENCES. 2014. DOI: 10.1016/j.cageo.2014.09.009.
- **C. Juez**, D. Caviedes-Voullième, J. Murillo and P. García-Navarro. *2D numerical simulation of gravity driven flow over complex topography with obstacles. Part II: numerical predictions of fluid structures and benchmarking*. COMPUTERS AND GEOSCIENCES. 2014. DOI 10.1016/j.cageo.2014.09.010.
- **C. Juez**, J. Murillo and P. García-Navarro. *A 2D robust, weak-coupled and efficient numerical model for transient shallow flow and movable bed*. ADVANCES IN WATER RESOURCES. 2014. DOI: 10.1016/j.advwatres.2014.05.014.
- **C. Juez**, J. Murillo and P. García-Navarro. *Numerical assessment of bed-load discharge formulations for transient flow in 1D and 2D situations*. JOURNAL OF HYDROINFORMATICS. 2013. DOI: 10.2166/hydro.2013.153.
- **C. Juez**, J. Murillo and P. García-Navarro. *2D simulation of granular flow over irregular steep slopes using global and local coordinates*. JOURNAL OF COMPUTATIONAL PHYSICS. 2013. DOI: 10.1016/j.jcp.2013.08.002.

+ CONGRESS

- **C. Juez**, J. Murillo and P. García-Navarro. *Weak and efficient coupling between the SWE and the Exner equation under a general framework for the bed load formulations*. Workshop on Advances in Numerical Modelling of Hydrodynamics. Sheffield, UK. 2015. Oral presentation.
- **C. Juez**, J. Murillo and P. García-Navarro. *Unsteady 2D flow over mobile bed with variable density*. River Flow 2014. Lausanne, Switzerland. 2014. Oral presentation.
- **C. Juez**, A. Lacasta, D. Caviedes-Voullième, J. Murillo and P. García-Navarro. *2D Numerical simulation of granular flow dynamics and validation with experimental data*. 3rd IAHR Europe Congress. Porto, Portugal. 2014. Oral presentation.
- J. Murillo, **C. Juez**, and P. García-Navarro. *A 2D model for the simulation of flow over irregular steep slopes using global and local coordinates*. MCPIT 2013. Paris, France. 2013. Oral presentation.
- **C. Juez**, J. Murillo and P. García-Navarro. *1D Numerical simulation of sediment transport with variable density*. 35th IAHR World Congress. Chengdu, China. 2013. Oral presentation.
- **C. Juez**, J. Murillo and P. García-Navarro. *2D Numerical simulation of the motion of a granular mass down a rough and inclined plane*. 35th IAHR World Congress. Chengdu, China. 2013. Oral presentation.
- **C. Juez**, J. Murillo and P. García-Navarro. *Numerical simulation of sediment transport dynamics. Comparison with experimental data*. The 8th Symposium on River, Coastal and Estuarine Morphodynamics. Santander, Spain. 2013. Poster.
- **C. Juez**, J. Murillo and P. García-Navarro. *Numerical discretization of the Exner equation in unsteady floods*. International Conference on Fluvial Hydraulics – River Flow 2012. San José, Costa Rica. 2012. Oral presentation.
- **C. Juez**, J. Murillo and P. García-Navarro. *International Workshop on River and reservoir hydrodynamics and morphodynamics*. Lisbon, Portugal. 2011. Poster.
- **C. Juez**, J. Murillo and P. García-Navarro. *II Jornadas de Ingeniería del Agua (JIA)*. National congress. Valencia, Spain. 2011. Oral presentation.
- **C. Juez**, D. González, E. Cueto, J. Herguido and M. Menéndez. *CFD Modeling of a Two Zone Fluidized Bed Reactor for Methane Aromatization*. Catalysis in Multiphase Reactors (CAMURE-8) & International Symposium on Multifunctional Reactors (ISMR-7). Naantali, Finland. 2011. Oral presentation.

+ COURSES AND SEMINARS

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| Oct. 2014 | 1st. Belgian's Hydraulic Day . Meeting of the Hydraulics involved organizations in Belgium. |
| Nov. 2013 | 8th International SedNet conference . Sediment management course. Lisboa, Portugal. |
| Nov. 2012 | International workshop EU-CHINA on scientific computing . CUDA and paralleling computing techniques. Zaragoza, Spain. |

Jun. 2011 **International Workshop on River and reservoir hydrodynamics and morphodynamics.** Lisbon, Portugal.

Dec. 2010 **Statistical and Methodologic tools.** Valencia, Spain.