



Virtual 5th DualSPHysics Users Workshop

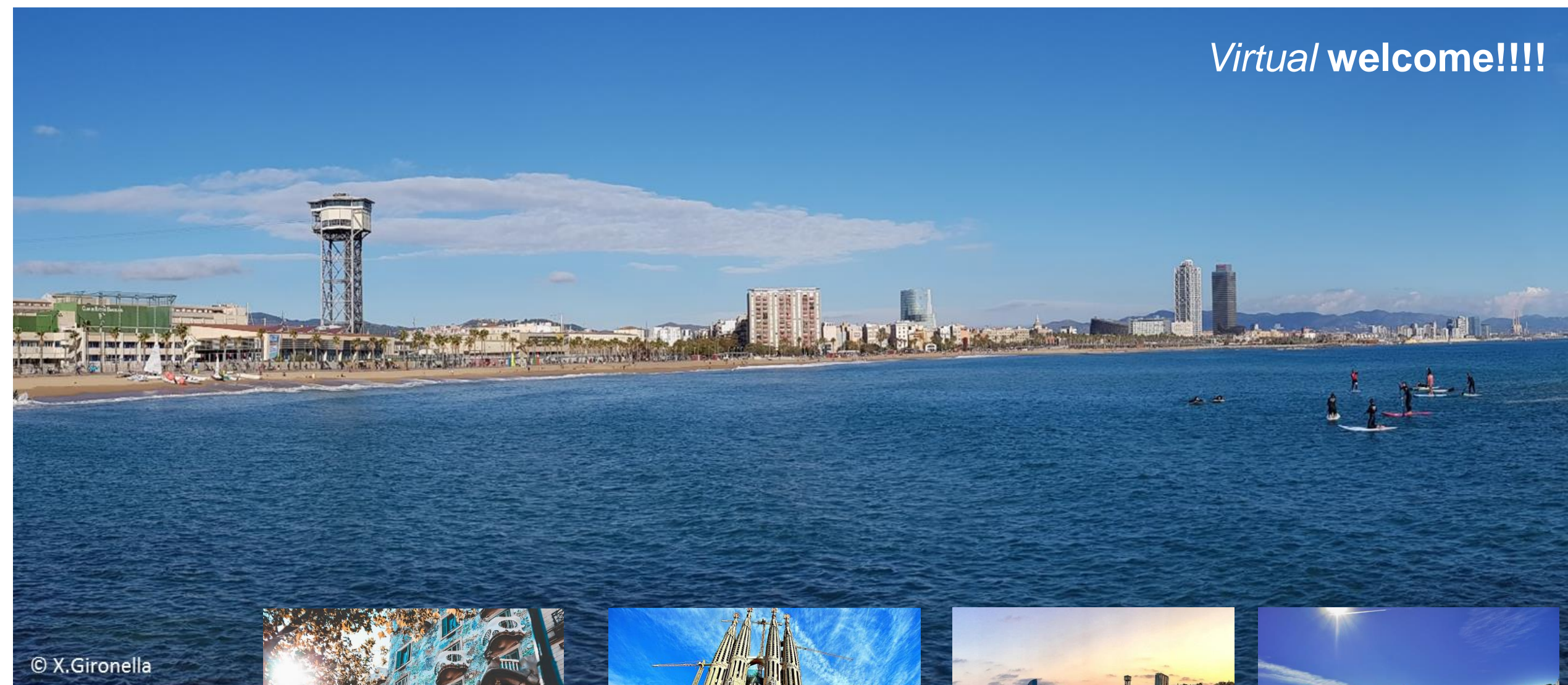
CORRADO ALTOMARE

UNIVERSITAT POLITÈCNICA DE CATALUNYA



15th – 17th March 2021

Virtual welcome!!!!



© X.Gironella



International DualSPHysics Users Workshop

2015 (1DUW), University of Manchester, U.K.: ≈ 30 participants

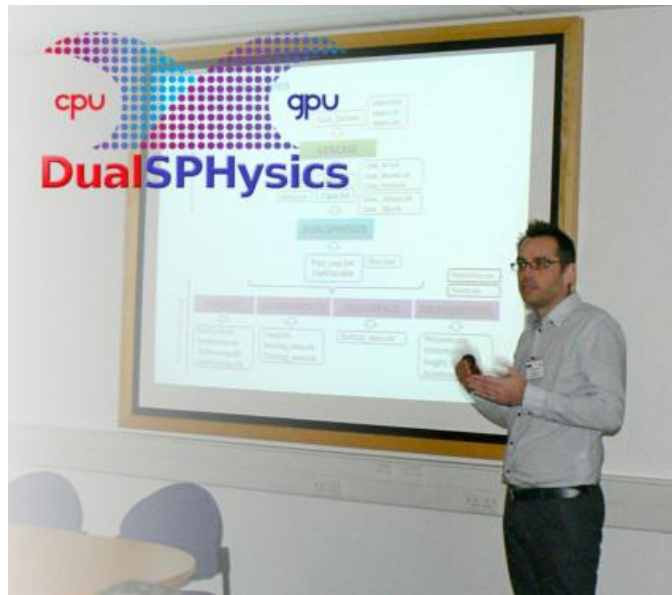
2016 (2DUW), University of Manchester, U.K : ≈ 60 participants

2017 (3DUW), University of Parma, Italy: ≈ 40 participants

2018 (4DUW), Instituto Superior Técnico, Lisboa : ≈ 60 participants

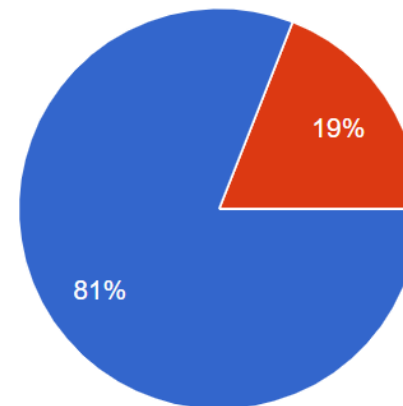
2020 (5DUW postponed), Universitat Politècnica de Catalunya, Spain: ≈ 80 participants

2021 (Virtual 5DUW): 226 participants



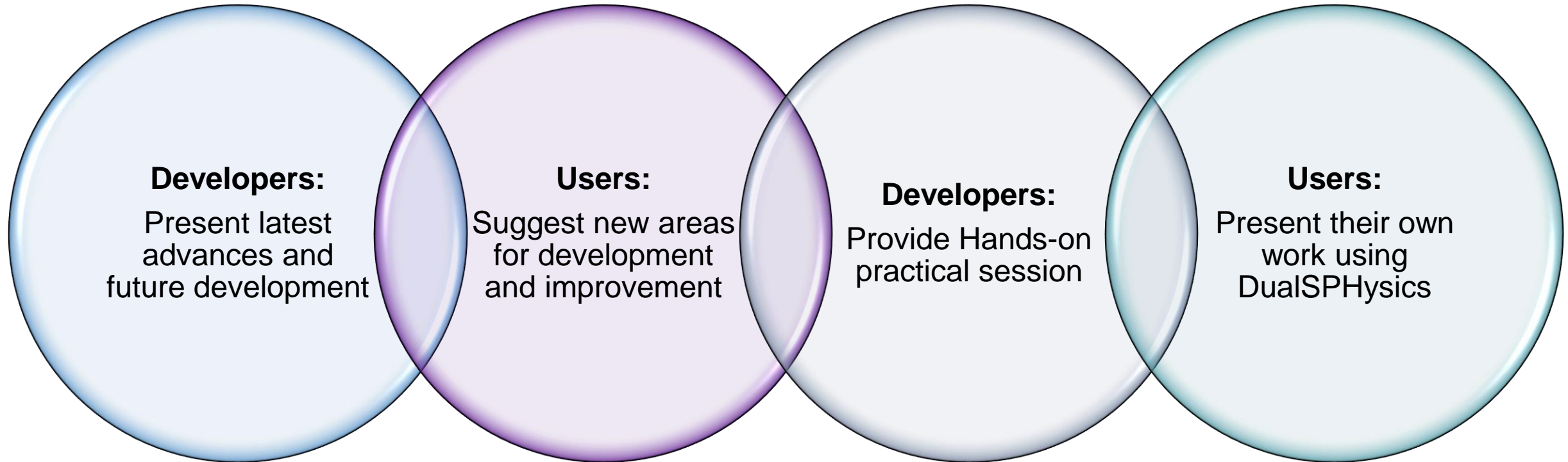
First time attendance?

226 respuestas



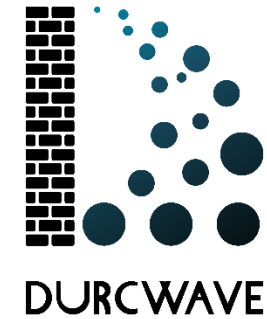
● YES
● NO

International DualSPHysics Users Workshop



Local Organising Committee (LOC), 5th Virtual DualSPHysics Users Workshop

- Dr Corrado Altomare, MSCA-IF Senior Research Fellow LIM-UPC (Chairman)
- Prof Xavier Gironella i Cobos, Associate Professor LIM-UPC
- Prof. Agustín Sánchez-Arcilla, Director LIM-UPC
- Dr Daniel Gonzalez Marco, Vicedirector LIM-UPC
- Joaquim Sospedra Iglesias



Scientific Committee

- Prof Benedict Rogers, The University of Manchester, U.K.
- Prof Moncho Gómez Gesteira, Universidade de Vigo, Spain
- Dr José Dominguez, Universidade de Vigo, Spain
- Prof Alex Crespo, Universidade de Vigo, Spain
- Dr Renato Vacondio, Università degli studi di Parma, Italy
- Dr Georgios Fourtakas, University of Manchester, U.K.
- Dr Angelo Tafuni, New Jersey Institute of Technology, US
- Dr Corrado Altomare, Universitat Politècnica de Catalunya - BarcelonaTech, Spain
- Dr Orlando Garcia-Feal, Universidade de Vigo, Spain



A hand in a black suit sleeve holds a black and white megaphone, pointing it towards a large white speech bubble on the right. The background is a solid light blue color.

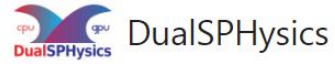
ANNOUNCEMENTS!!!



DualSPHysics

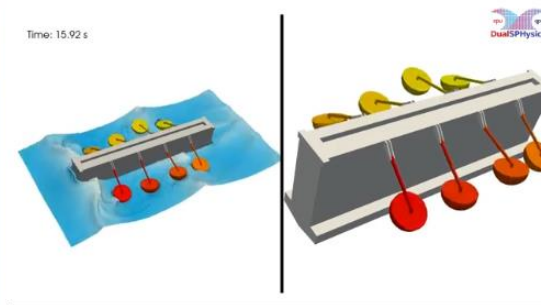
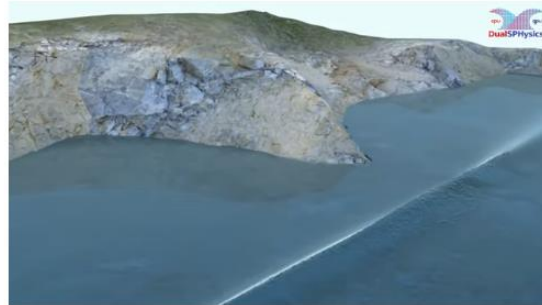


<https://dual.sphysics.org/>



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DualSPHysics is based on the Smoothed Particle Hydrodynamics model named SPHysics (www.sphysics.org). The code is developed (GNU Lesser General Public License) to study free-surface flow phenomena where Eulerian methods can be difficult to apply. **DualSPHysics** is a set of C++ and CUDA codes designed to deal with real-life engineering problems.



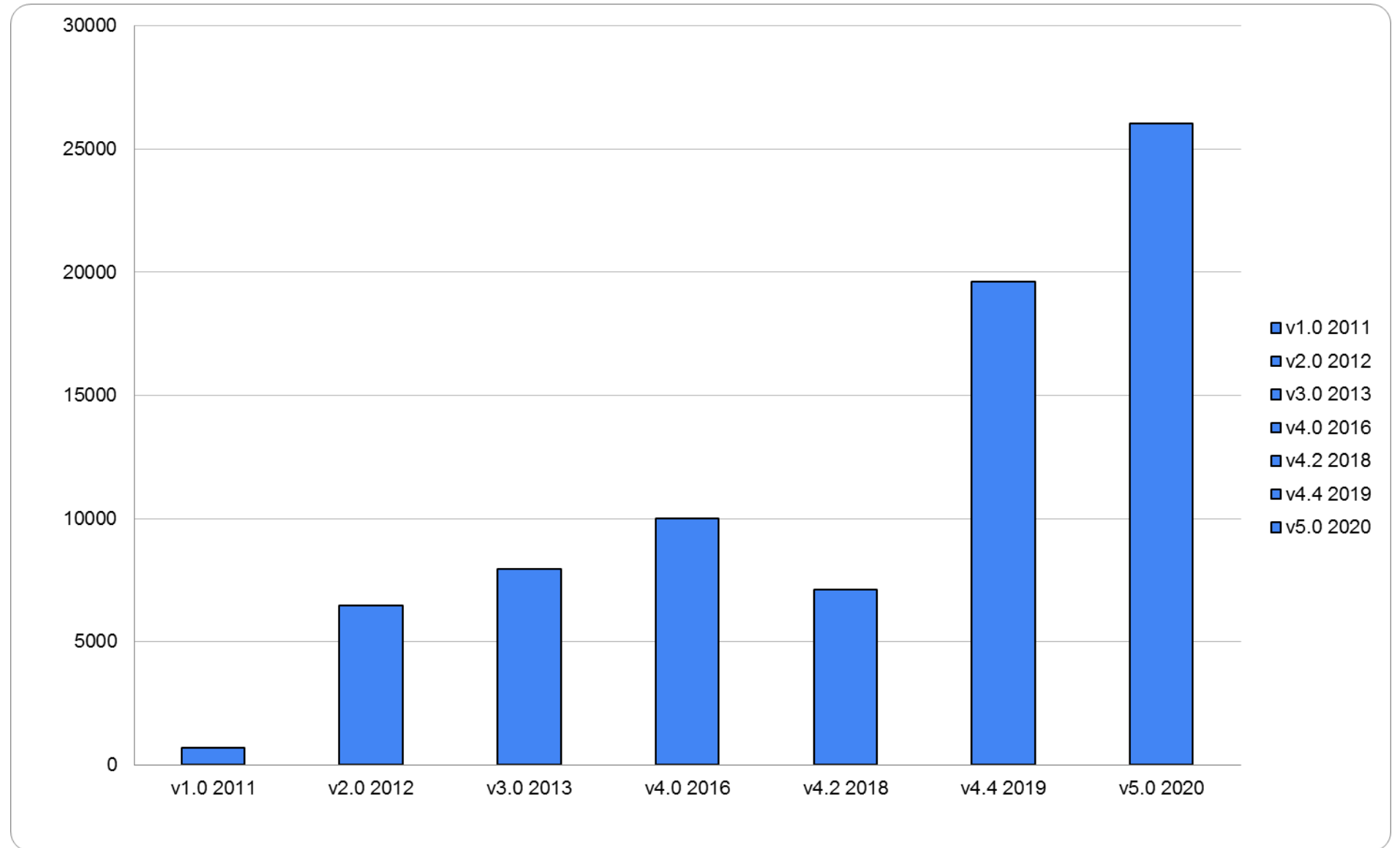
Next events



Tweets by @DualSPHysics

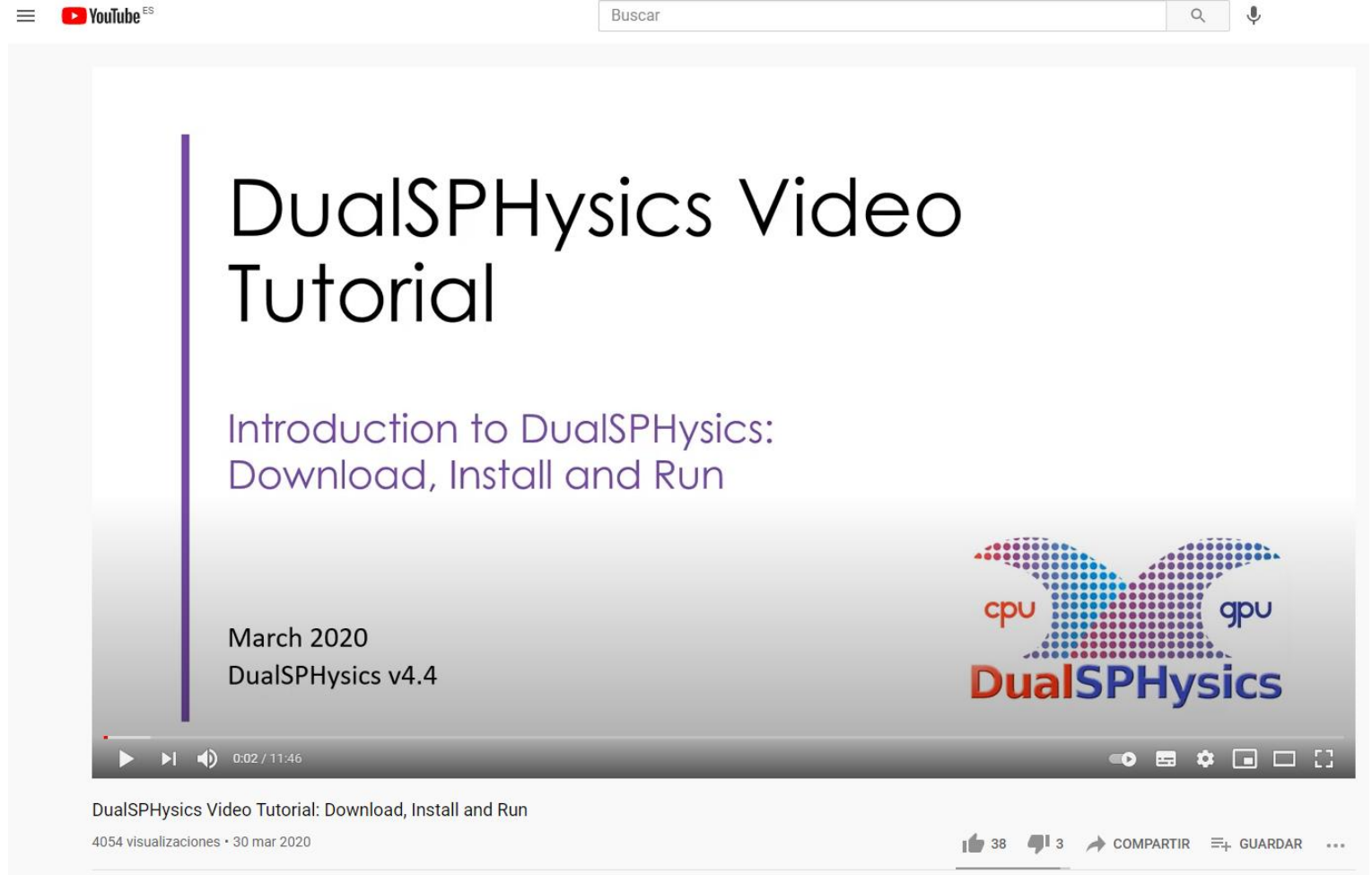


77,900 downloads
since its first release!



New tutorial video for the package (v4.4 but it is the same for v5):

DualSPHysics Video Tutorial: Download, Install and Run: https://youtu.be/_sL1iQUJfs8



The image shows a screenshot of a YouTube video player. The video title is "DualSPHysics Video Tutorial" and the subtitle is "Introduction to DualSPHysics: Download, Install and Run". The video was uploaded in March 2020 and is for DualSPHysics v4.4. The video player interface includes a search bar at the top, a play button, a progress bar showing 0:02 / 11:46, and a video player control bar at the bottom. The video content features a large title, a subtitle, and a logo for DualSPHysics that includes the text "cpu" and "gpu" and a stylized globe made of dots.

New Special Issue on “Latest Developments and Application of SPH using DualSPHysics” in Computational Particle Mechanics.

<https://dual.sphysics.org/5thusersworkshop/special-issue>

Leading Guest Editor

- Dr Corrado Altomare (corrado.altomare@upc.edu), Universitat Politècnica de Barcelona - BarcelonaTech, Spain

Co-guest editors

- Dr José M. Domínguez (jmdominguez@uvigo.es), Universidade de Vigo, Spain
- Dr Georgios Fourtakas (georgios.fourtakas@manchester.ac.uk), The University of Manchester, UK

Please note that the special issue is created as **Author Questionnaire**. Kindly refer to the below appended screenshots in this regard.

For any query or doubt, please contact directly with the Leading Guest Editor, at corrado.altomare@upc.edu

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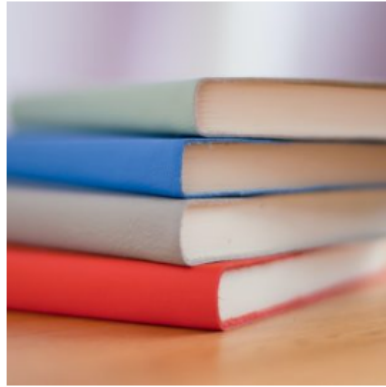
Please respond to the presented questions/statements.

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Questionnaire

Please verify that you have included a conflict of interest statement in your manuscript. A conflict of interest exists whenever an author has a financial or personal relationship with a third party whose interests could be positively or negatively influenced by the article's content. This should be added in a separate section before the reference list. If no conflict of interest exists for all participating authors, the corresponding author should use the following

Journal papers



Reference paper

J.M. Domínguez, G. Fourtakas, C. Altomare, R.B. Canelas, A. Tafuni, O. García-Feal, I. Martínez-Estévez, A. Mokos, R. Vacondio, A.J.C. Crespo, B.D. Rogers, P.K. Stansby, M. Gómez-Gesteira 2021.
DualSPHysics: from fluid dynamics to multiphysics problems.
Computational Particle Mechanics, *in press*.

2021

Tagliaferro B, Mancini S, Ropero-Giralda P, Domínguez JM, Crespo AJC, Viccione G. 2021 Performance Assessment of a Planing Hull Using the Smoothed Particle Hydrodynamics Method. Journal of Marine Science and Engineering, 9, 244. doi: [10.3390/jmse9030244](https://doi.org/10.3390/jmse9030244).

Pringgana G, Cunningham LS, Rogers BD. 2021. Influence of Orientation and Arrangement of Structures on Tsunami Impact Forces: Numerical Investigation with Smoothed Particle Hydrodynamics. J. Waterway, Port, Coastal, Ocean Engineering, 147(3), doi:[10.1061/\(ASCE\)WW.1943-5460.0000629](https://doi.org/10.1061/(ASCE)WW.1943-5460.0000629).

Quartier N, Ropero-Giralda P, Domínguez JM, Stratigaki V, Troch P. 2021. Influence of the drag force on the average absorbed power of heaving Wave Energy Converters using Smoothed Particle Hydrodynamics. Water. 13(3), 384. doi:[10.33390/w13030384](https://doi.org/10.33390/w13030384).



Virtual 5th DualSPHysics Users Workshop



Programme



Keynote lecture: Modeling viscous forces in SPH, from [Prof. Antonio Souto Iglesias \(16/03/2021\)](#)

6 Developers Talks (all, 16/03/2021)

Corrado Altomare	Welcoming
Benedict Rogers	Overview of version 5.0
Renato Vacondio	New density diffusion term
José Domínguez	News on pre-processing tool and boundary conditions
Georgios Fourtakas	New rheology models, non-Newtonian formulations and multiphase flows
Angelo Tafuni	Open boundaries: inlet and outlet conditions
Alejandro Crespo Iván Martínez Estévez	Coupling with MoorDyn library and with Project Chrono

28 Delegate presentations in 6 sessions (1 & 2 on 16/03/2021; 3-6 on 17/03/2021)

Final discussion (17/03/2021)



Let's start!