

## **JOHAN AUGUSTO BOCANEGRA CIFUENTES**

*Physicist, Mg. Teaching Exact and Natural Sciences, Ph.D. candidate Technical Physics*

### **PROFESSIONAL PROFILE**

I have finished the second year of the Ph.D. in technical physics at the Genoa University. My projects have included computational simulation of physical systems using different programming languages and computing platforms, I have worked on the development of didactic proposals supported by new technologies. Additionally, within my technical skills, the use of microcontrollers such as Arduino.

I have held management positions in education, performing planning and control tasks, as well as the implementation and leadership of the ISO 9001 Quality Management System in educational contexts.

### **PERSONAL SKILLS**

**Language skills:** Italian, Spanish, English (LEVEL C1/ TOEFL certificate)

**Digital skills:** COMSOL, Ansys Fluent, Elmer multiphysics, Z88, Lattice Boltzmann PALABOS, I-SIMPA, AGROS2D, Freecad, Matlab, Scilab, Mathematica, C++, Python, Arduino, LabView, Audacity, Audition, Ableton Live, Zotero.

### **EDUCATION AND TRAINING**

**2018** Ph.D. Candidate in Technical Physics

Università degli Studi di Genova, DIME

Second-year approved and active in the third year.

**2013** (Mg.) Magister in Teaching Exact and Natural Sciences

Universidad Nacional de Colombia

Thesis titled: *Mechanical wave laboratory supported with free access information and communication technologies, a didactic proposal for the teaching of basic acoustics based on free access Technologies.*

**2006** Physics

Universidad Nacional de Colombia

Thesis entitled: *Numerical implementation of a mammalian inner ear model.*

**1999** High school with an emphasis in Natural Sciences

Instituto Alberto Merani

### **COMPLEMENTARY STUDIES**

**Course:** LabVIEW core 2. National Instruments. 26/01/2021– 28/01/2021

**Workshop/ School:** Palabos Summer School 2020, UniGe (University of Geneva, Switzerland) and Hepia (University of Applied Sciences of Western Switzerland). 8/7/2020 -10/7/2020.

**Course:** Advanced programming in MATLAB and Simulink. Prof. Matteo Lodi. Università degli Studi di Genova. 17/07/2020.

**Course:** spectral analysis in practice. Prof. Ing. Giovanni Battista Rossi. Università degli Studi di Genova. 20/02/2020.

**Seminar:** Tomorrow's professor. Walid Kamali Ph.D. City University, Engineering & IT Maritime Studies/ Università degli Studi di Genova. 17/12/2019.

**Seminar:** Geological and geotechnical insights related to borehole heat exchanger design and realization for geothermal heat pump applications. Dr. Giorgia Dalla Santa Ph.D. Università degli Studi di Genova. 25/11/2019.

**Course:** Numerical Thermical Fluid Dynamics/Termofluidodinamica numerica (master course). Prof. Francesco Devia, Università degli Studi di Genova. 2019.

**Course:** Heat Transfer/ Trasmissione del calore (master course). Prof. Giovanni Tanda, Università degli Studi di Genova. 2019.

**Course:** Acoustic design for buildings (master course). Prof. Davide Borelli & Prof Corrado Schenone, Università degli Studi di Genova. 2019.

**Workshop/ School:** Modelling, manufacturing and application of porous sound packages in today's industry, MATELYS – Research Lab, ENTPE. Lyon (France). 23/04/2019 24/04/2019.

**Workshop/ School:** Scuola Estiva di Fisica Tecnica XI edizione: nuove frontiere in tema di trasmissione del calore, Università degli Studi del Sannio, Massa Lubrense - Sorrento. 8/7/2019 -12/7/2019.

**Seminar:** Heat Storage Technologies, Prof. Aldo Giovannini, MCI Innsbruck, Università degli Studi di Genova/ MCI University Innsbruck. 29/05/2019.

**Seminar:** Worldwide energy situation: from waste exploitation to thalasso energy frontiers, Prof. Hervé Boileau, USMB, Università degli Studi di Genova/ Université Savoie Mont Blanc. 17/04/2019.

**Seminar:** Monitoraggio, simulazione e previsione del vento, DICCA, Università di Genova. 28/02/2019.

**Online Course:** Simulation and modeling of natural processes, Prof. Bastien Chopard, Prof. Jean-Luc Falcone, Prof. Jonas Latt, and Prof. Orestis Malaspinas, University of Geneva. 12/14/2018.

**Online Course:** Introduction to solar cells, Morten Vesterager Madsen, Technical University of Denmark (DTU). 11/28/2018

**More courses:** Micro architecture and interior design, Universidad Nacional de Colombia. Active Learning in Optics and Photonics, ALOP-UNESCO,

Universidad Nacional de Colombia. New Tools for Creation in the Visual Arts Modules I and II, Universidad Nacional de Colombia.

## WORK EXPERIENCE

- 2021** Università degli Studi di Genova  
*Functions: Didactics support, for official teaching of “Acoustic Design for Buildings”, Numerical methods in acoustics.*
- 2020** Università degli Studi di Genova  
*Functions: Didactics support, for official teaching of “Acoustic Design for Buildings”, Numerical methods in acoustics.*
- 2019-2020** Polo Universitario Guglielmo Marconi Promostudi La Spezia, Università degli Studi di Genova.  
*Functions: Didactics support, for official teaching of “Technical Physics 1, laurea Triennale in Ingegneria Nautica”.*
- 2012-2017** Colegio Integral  
*Functions: Director / Principal*
- 2014-2015** Universidad la Gran Colombia  
*Functions: Teaching Basic Sciences, Numerical Methods, Mathematics, and Experimental Physics - Civil Engineering*
- 2007-2012** Colegio Unidad Pedagógica  
*Functions: Teaching Physics and Mathematics*

## RECENT RESEARCH ACHIEVEMENT

Thermo-hydraulic performance of connected single-phase natural circulation loops characterized by two different inner diameters, Mario Misale, Johan Augusto Bocanegra, Annalisa Marchitto, *International Communications in Heat and Mass Transfer*, Volume 125, **2021**, 105309, ISSN 0735-1933, <https://doi.org/10.1016/j.icheatmasstransfer.2021.105309>.

Experimental analysis of four parallel single-phase natural circulation loops with small inner diameter, Mario Misale, Johan Augusto Bocanegra, Davide Borelli, Annalisa Marchitto, *Applied Thermal Engineering*, Volume 180, **2020**, 115739, ISSN 1359-4311, <https://doi.org/10.1016/j.applthermaleng.2020.115739>

Bocanegra Cifuentes, J.A.; Borelli, D.; Cammi, A.; Lomonaco, G.; Misale, M. Lattice Boltzmann Method Applied to Nuclear Reactors—A Systematic Literature Review. *Sustainability* **2020**, *12*, 7835. <https://doi.org/10.3390/su12187835>

Review of Acoustic Hysteresis in Flute-Like Instruments, Bocanegra, J.A. and Borelli, D. Proceedings of the 26th *International Congress on Sound and Vibration*, Montreal, Canada, **2019**, p. 8. ISSN 2329-3675, ISBN 978-1-9991810-0-0.

Genoa, 30/07/2021

*Johan Augusto Bocanegra Cifuentes*