



Dario Abbondanza

Gender: Male

TEACHING AND RESEARCH ACTIVITIES

Postdoctoral researcher at Sapienza University of Rome

[04/2021 – Current]

Postdoctoral researcher in theoretical and computational fluid dynamics, fluid-structure interaction and multiphase flows.

Instructor at Temple University Rome Campus

[01/2021 – 04/2021]

Instructor for the course ENGR 3571 - Classical and Statistical Thermodynamics.

Instructor at Temple University Rome Campus

[01/2020 – 04/2020]

Instructor for the course ENGR 3571 - Classical and Statistical Thermodynamics

Teaching assistant at Sapienza University of Rome

[10/2019 – 01/2020]

Teaching assistant for the course of Analytical Mechanics (Prof. Daniele Andreucci)

Teaching assistant at Temple University Rome Campus

[01/2019 – 04/2019]

Teaching assistant for the course ENGR 3571 - Classical and Statistical Thermodynamics

Visiting postgraduate student at University of Glasgow

[09/2018 – 12/2018]

Developing structural mechanics code to simulate elastoplastic material behavior.

Supervisor: Dr. Andrew McBride

Co-advisor of 2 Master Thesis

EDUCATION AND TRAINING

Ph.D. candidate in Theoretical and Applied Mechanics

Sapienza University of Rome [01/11/2017 – 31/12/2020]

https://phd.uniroma1.it/web/THEORETICAL-AND-APPLIED-MECHANICS_nD3520_EN.aspx

M.S. in Mechanical Engineering

Sapienza University of Rome [01/10/2015 – 30/10/2017]

Field(s) of study: Engineering, manufacturing and construction

Final grade : 110/110 cum laude

Thesis: A numerical model for the dynamics of macroscopic cavitation bubbles near solid boundaries



M.S. at Sapienza School for Advanced Studies (SSAS)

Sapienza University of Rome [01/11/2015 – 30/10/2017]

<https://web.uniroma1.it/ssas/en>

Final grade : 70/70 cum laude

Thesis: Fluid structure interaction: cavitation phenomena

B.S. in Mechanical Engineering

Sapienza University of Rome [01/10/2012 – 21/12/2015]

Field(s) of study: Engineering, manufacturing and construction

Final grade : 110/110 cum laude

Thesis: Functionally graded beams under the action of distributed loads and thermal gradients

B.S. at Sapienza School for Advanced Studies (SSAS)

Sapienza University of Rome [01/11/2012 – 30/10/2015]

<https://web.uniroma1.it/ssas/en>

Final grade : 70/70 cum laude

Thesis: An energetic model for the study of linear dynamics and eigenfrequencies of nano-beams

Diploma Liceo Classico

Liceo classico "Luciano Manara" [09/2007 – 06/2012]

Address: Rome (Italy)

Final grade : 98/100

CONFERENCES AND SEMINARS

Artificial Intelligence: a glimpse of techniques, ethical issues & interaction with humanities (organizer)

[Online, 12/06/2020]

Workshop organized with the support of the **Institut français**, in the context of the **Cassini Project 2019** for Ph.D. students.

<https://sites.google.com/uniroma1.it/cassiniworkshop2020/home-page>

<https://www.youtube.com/watch?v=p6oSaSjTPME>

<https://www.youtube.com/watch?v=aBeisgvzIE>

CECAM - Challenges in Multiphase Flows (participant)

[Monash University, Prato Center, Tuscany, Italy, 09/12/2019 – 12/12/2019]

<https://users.monash.edu.au/~rprakash/cecam2019/home.html>

Sixth deal.II Users and Developers Workshop (participant)

[SISSA University, Trieste, Italy, 23/07/2018 – 27/07/2018]

<https://indico.sissa.it/event/23/>



PROJECTS

Iscra C Cineca

[01/05/2020 – Current]

ACID - *Assessing Cavitation Induced Deformations* (P.I.).

Assigned budget: 80000 core hours on GALILEO supercomputer

Sapienza project

[27/10/2019 – 27/10/2020]

Avvio alla ricerca - *Numerical implementation of elasto-viscoplastic models with damage for the study of the strong interaction between a capillary fluid and a solid material.* (P.I. - 1200€ funding)

Iscra B Cineca

[19/08/2019 – 19/08/2020]

HET-NUCL (Collaborator)

Assigned budget: 1.5M core hours on GALILEO supercomputer

Iscra C Cineca

[06/12/2018 – 06/09/2019]

CESM - *Cavitation Effects on Solid Materials* (P.I.).

Assigned budget: 112500 core hours on MARCONI KNL supercomputer

INTERNATIONAL PROJECTS

Collaborator in the ERC Advanced Grant for the project BIC

Project **BIC** (Cavitation across scales: following Bubble from Inception to Collapse, agreement # 339446-BIC P.I. Prof. Carlo Massimo Casciola).

Collaborator in the ERC Proof-of-Concept (2017 call) project INVICTUS

Project **INVICTUS** (IN Vitro Cavitation Through UltraSound, proposal # 779751 P.I. Prof. Carlo Massimo Casciola).

HONOURS AND AWARDS

Laureato eccellente 2018

Fondazione Roma Sapienza [2018]

Among the 500 best graduate students for the academic year 2016/2017



DIGITAL SKILLS

Software for scientific editing and production

Tecplot360 / Wolfram Mathematica / LaTeX / Gnuplot / GiMP

Operating systems used

Linux / Windows / IOS

Programming languages

C / C++ / Basic of Python / Basic of Fortran

HPC libraries

PETSc / deal.II

LANGUAGE SKILLS

Mother tongue(s):

Italian

Other language(s):

English

LISTENING C1 READING C1 WRITING C1

SPOKEN PRODUCTION C1 SPOKEN INTERACTION C1

PUBLICATIONS

Linear dynamic response of nanobeams accounting for higher gradient effects.

[2016]

<https://iris.uniroma1.it/handle/11573/1272667#.X9EjM9hKiUk>

Abbondanza, Dario; Battista, Daniele; Morabito, Francescogiuseppe; Pallante, Chiara; Barretta, Raffaele; Luciano, Raimondo; de Sciarra, Francesco Marotti; Ruta, Giuseppe. - In: JOURNAL OF APPLIED AND COMPUTATIONAL MECHANICS. - ISSN 2383-4536. - 2:2(2016), pp. 54-64.

Modulated linear dynamics of nanobeams accounting for higher gradient effects

[2016]

<https://iris.uniroma1.it/handle/11573/1070674#.X9EjedhKiUk>

Abbondanza, Dario; Battista, Daniele; Morabito, Francescogiuseppe; Pallante, Chiara; Barretta, Raffaele; Luciano, Raimondo; de Sciarra, Francesco Marotti; Ruta, Giuseppe. - In: INTERNATIONAL JOURNAL OF ENGINEERING AND APPLIED SCIENCES. - ISSN 1309-0267. - ELETTRONICO. - 8:2(2016), pp. 1-20.