Marco Del Tutto

Curriculum Vitae

Postdoctoral Fellow, Harvard University
Palfrey House - Cambridge MA
02138 United Stated
+44 (0)7934524895
marco.deltutto@gmail.com
marcodeltutto.com

Personal information

First, Last Name	Marco, Del Tutto
Place and date of birth	Rome (Italy), 30 October 1991.
Nationality	Italian

Education

2015 – 2019 **PhD in Particle Physics at the University of Oxford, UK**.
Title of the thesis: First Measurements of Inclusive Muon Neutrino Charged Current Differential Cross Sections on Argon at 0.8 GeV Average Neutrino Energy with the MicroBooNE Detector.
Web-page: `www2.physics.ox.ac.uk/contacts/people/deltutto`
Advisors: Prof. Roxanne Guenette, Prof. Giles Barr

2013 – 2015 **Master's Degree in Physics *cum laude* at the University of Rome "Sapienza"**.
Title of the thesis: Neutrino Beam Simulations and Data Checks for the NOνA Experiment.
The thesis work has been done at the Fermi National Accelerator Laboratory (Fermilab, Batavia, IL, USA) from March to September 2015.
Score: 110/110 cum laude

2010 – 2013 **Bachelor's Degree in Physics *cum laude* at the University of Rome "Sapienza"**.
Title of the thesis: Onde gravitazionali da sistemi binari di pulsar (Gravitational waves form binary pulsars systems).
Score: 110/110 cum laude

2005 – 2010 **Scientific high school diploma at 'Liceo Scientifico M. Malpighi' (Italy)**.
Score: 100/100.

2004 – 2009 **Diploma at the International Study of Actors 'Permis de Conduire' (Italy)**.
Score: 110/110.
Subject: 40 minutes monologe composed by myself and my supervisors taking pieces from Woody Allen and James Joice.

Awards

2016 **Donald H. Perkins Prize**.
I was awarded this prize for outstanding performance in the first year of postgraduate study at the University of Oxford.

2016 1^{st} **Prize Particle Physics Art Competition**.
I was awarded this prize during the Particle Physics Art Competition at the University of Oxford. The goal of this art competition is to realize artworks that relate to particle physics.

2015 **ARAP Prize in Experimental Particle Physics**.
The Roman Astro-Particle Association (ARAP) promotes a prize in experimental particle physics designed to reward Master's degree deserving students in particle physics.

2014 **Summer Student at Fermilab**.
During August and September 2014 I worked on a research project at the Fermi National Accelerator Laboratory (Fermilab) as a summer intern. Admission to this summer internship is on a highly competitive basis. Participants are selected on the basis of their academic achievement, average score in the exams, and their suitability for the program, as determined by an interview.

Teaching Experience

2018 **Teacher at the first Oxford Virtual and Augmented Reality Summer School**.
I taught at the first Oxford Virtual and Augmented Reality Summer School. I led a group of student in the making of their first Virtual Reality application.

2017 **High Energy Physics Lab. Demonstrator at the University of Oxford**.
I was a demonstrator at the particle physics lab. in Oxford.

2017 **Supervision to Oxford Summer Students**.
I supervised one student for the whole summer both in Oxford and at Fermilab.

Conferences and Talks

2018 **Harvard University - Laboratory for Particle Physics and Cosmology Seminar**.
Invited Seminar on *First Muon Neutrino Charged-Current Inclusive Cross Section Measurement in MicroBooNE*

2018 **GDR Neutrino Meeting**.
Invited Talk on *VENu: The Virtual Environment for Neutrinos*
Slides: `https://indico.in2p3.fr/event/17494/`

2018 **Neutrino2018**.
Poster on *First Muon Neutrino Charged-Current Inclusive Cross Section Measurement in MicroBooNE*
Proceedings: `https://doi.org/10.5281/zenodo.1300795`

2018 **Nu-Print, Neutrino Cross Section Strategy Workshop**.
Invited Talk on *MicroBooNE Future Cross Section Measurements and Capabilities*
Slides: `https://indico.fnal.gov/event/15849/session/3/contribution/13`

2017 **NUFACT2017**.
Invited Talk on *Cross Section Prospects for MicroBooNE*
Proceedings: `https://pos.sissa.it/295/068/`

2017 **APS, Division of Particles and Fields Meeting**.
Talk on *VENu: The Virtual Environment for Neutrinos*
Proceedings: `https://arxiv.org/abs/1709.10120`

2017 **Rencontres de Moriond**.
Invited Talk on *Neutrino Interactions at MicroBooNE*
Proceedings: `https://arxiv.org/abs/1705.04894`

2016 **Neutrino2016**.
Poster on *Model Uncertainties at MicroBooNE*
Proceedings: `http://iopscience.iop.org/article/10.1088/1742-6596/888/1/012140`

Outreach

VENu, *Virtual Environment for Neutrinos*.

I am the main author of the *VENu* (Virtual Environment for Neutrinos). VENu is a mobile app which allows you to see data from the MicroBooNE experiment on your phone. It also has a 3D Virtual Reality feature the immerse the users inside the detector. Link: `http://venu.physics.ox.ac.uk`.

Collider.

I also worked on another mobile app to show events from the ATLAS detector at CERN, called *Collider*: `http://collider.physics.ox.ac.uk`.

2017 **Stargazing**, *Oxford University*.
Launched the VENu app.

2017 **Chicago Science Festival**, *Chicago*.
Showcase of the VENu app in a Fermilab stall.

2017 **Oxford Garden Party**, *Oxford University*.
Neutrino physics explained via the VENu app to Oxford visitors.

Publications

As a member of the MicroBooNE collaboration, I am co-author of ∼15 articles. What follows is a selected list of papers that I was closely involved with.

2018 **First Muon-Neutrino Charged-Current Inclusive Cross-Section Measurement on Argon with a 0.8 GeV Mean Energy Neutrino Beam**, *in preparation*.

2017 **A Novel Cosmic Ray Tagger System for Liquid Argon Neutrino Detectors**, *M. Auger* et al., *Instruments 1 (2017)*.

2018 **Comparison of Muon-Neutrino-Argon Multiplicity Distributions Observed by MicroBooNE to GENIE Model Predictions**, *submitted to PRD*.

2017 **Design and Construction of the MicroBooNE Detector**, *MicroBooNE Collaboration, JINST 12, P02017*.

2016 **First Measurement of Electron Neutrino Appearance in NOvA**, *NOvA Collaboration, PRL 116, 151806*.

2016 **First measurement of muon-neutrino disappearance in NOvA**, *NOvA Collaboration, Phys. Rev. D 93, 051104(R)*.

Journalistic Interviews

2017 **Podcast**, *IOP Physics World*.
Link: `https://physicsworld.com/a/tracking-neutrinos-in-virtual-reality/`

2017 **Interview**, *International Business Times*.
Link: `https://www.ibtimes.co.uk/venu-oxford-university-launches-vr-game-\app-teach-people-about-neutrino-particles-1603894`

2017 **Interview**, *Local TV "That's Oxfordshire"*.
Link: `https://www.youtube.com/watch?v=5mcDG54CYZY`

2017 **Interview**, *Fermilab*.
Link: `http://news.fnal.gov/2017/07/venu-makes-possible-watch-neutrino-\hunter-work/`

2017 **Interview**, *Oxford*.
Link: `http://www.ox.ac.uk/news/2017-01-30-find-elusive-particles-your-phone-\oxford's-new-neutrino-viewer-app`