

## Curriculum vitae Nicola D'Ambrosio

### Personal

Nationality : Italian

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### CURRENT POSITION

From march 2019 Dirigente Tecnologo at "Laboratori Nazionali del Gran Sasso " of the INFN.

From 2006 – 2019 Primo Tecnologo at "Laboratori Nazionali del Gran Sasso " of the INFN.

From 2003 to 2006 – Primo Tecnologo at "Sezione di Napoli" of the INFN.

From 2001 to 2003 – Tecnologo at "Sezione di Napoli" of the INFN.

From 1998 to 2000 – Research Contract of the European Commission at University of Muenster (Germany). Contract TMR n. ERBFMRX-CT98-0196.

From 2000 to 2001 – Research Fellowship at University "Federico II", Naples (Italy).

From 1996 to 1998 – Fellowship at "Sezione di Napoli" of the INFN.

From 1995 to 1996 – Research contract at "Osservatorio astronomico di Capodimonte" , Naples (Italy).

### EDUCATION

Degree in Physics (Electronics) , University "La Sapienza" , 1995 - Rome (ITALY).

### INSTITUTIONAL AND TECHNICAL RESPONSIBILITIES

Responsible of the Electronic Service at LNGS since May 2010.

Group Leader and Technical Coordinator of the NEWSdm project since June 2016.

Resource Coordinator of the OPERA collaboration from May 2014 to May 2018.

Member of the Executive Board of the OPERA collaboration from May 2014.

Group Leader of the OPERA-LNGS from February 2009 to December 2016.

Responsible and coordinator of the European Scanning Station (OPERA collaboration).

Responsible and coordinator of the Hardware Project of a fast automatic microscopy system for emulsion analysis in the framework of the OPERA collaboration.

Member of the technical committee of the "Conference on Advances in Circuits, Electronics and Micro-electronics" (CENICS) in 2018 and 2019.

### SCIENTIFIC INTERESTS

Neutrino physics, Dark Matter searches, Electronics, Automation, Image Analysis, Particle Detectors, Medical Imaging, Interdisciplinary applications, Outreach.

### PATENTS

Italian patent ( n. 102016000132813) and International patent (PCT/IB2017/058544)for a "Method and optical microscope for detecting particles having sub-diffractive size".

### REVIEWER ACTIVITIES

Reviewer for Nuclear Instruments and Methods in Physics Research Section A (NIMA).  
Reviewer for Geoscientific Instrumentation, Methods and Data Systems (GI).  
Reviewer for Journal of Instrumentation (JINST)  
Reviewer for Journal for Advanced Instrumentation in Science (JAIS)

### **TEACHING ACTIVITIES**

From 2002 to 2004 - Adjunct Professor – Computer Architecture, University “Federico II” , Naples (Italy).  
From 2006 to 2007 - Adjunct Professor – Informatics, University “G. D’Annunzio” , Chieti (Italy).  
2010 – Tutor for a Fellowship at “Laboratori Nazionali del Gran Sasso “ (INFN) - Gran Sasso in Rete – POR Abruzzo (Italy).  
2012 – Tutor for two Fellowship at “Laboratori Nazionali del Gran Sasso “ (INFN) - La società della conoscenza in Abruzzo – POR Abruzzo (Italy)  
2013 – Tutor for a Fellowship at “Laboratori Nazionali del Gran Sasso “ (INFN) - Sistema sapere e crescita – POR Abruzzo (Italy).

### **MAJIOR COLLABORATIONS (Research Activities)**

From 2001 - Research activities in the international collaboration of the OPERA Experiment (INFN), <http://operaweb.lngs.infn.it> . I have the responsibility of European Scanning Station for nuclear emulsion analysis. In 2010 in this laboratory has been found the preliminary signal of the first neutrino tau candidate, that was later confirmed as the first direct observation of a tau particle in a muon neutrino beam.

Member of the PTOLEMY collaboration that aims to develop a Cosmic Neutrino Background detector, actually I am involved in the electronics and automation development.

From 2016 I am the group leader and Technical Coordinator of the NEWSdm (Nuclear Emulsion for Wimp Search directional measurement) at LNGS.

From 1998 to 2000 – Research activities in the RD39 project (CERN) for the characterization of Si detectors at low temperature, irradiated by fast reactor neutrons.

From 1995 to 2000 Research activities in the international collaboration of the CHORUS Experiment (INFN – CERN) , <http://choruswww.cern.ch/> . The experiment searched for muon neutrino to tau neutrino oscillations using a beam generated by CERN SPS accelerator.

I had the responsibility of the first R&D laboratory for automatic emulsion scanning.

### **TECHNOLOGICAL TRANSFER AND OUTREACH**

In collaboration with a group of INFN-NAPLES, University of Salerno, and University of Tokyo I am involved in a technological transfer activity that use the nuclear emulsion , electronic detector and automated microscope system to make “muon radiography” of the volcano cone, in 2011 and 2012 we installed a detector on Stromboli volcano and obtained good results into the location of the magma chamber.

Coordinator of an activity in the framework of SHARPER (Notte Europea dei Ricercatori), from 2015 to 2019