

# CURRICULUM VITAE - Luca Scotto Lavina

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First Name: Luca  
Family Name: Scotto Lavina  
Place and Date of birth: Napoli (Italy); April 27, 1976  
Nationality: Italian  
E-mail: scotto@lpnhe.in2p3.fr

## EDUCATION AND WORK

2016 - present Chargé de recherche CNRS, LPNHE, Paris  
2010 - 2016 Chargé de recherche CNRS, Subatech, Nantes  
2005 - 2010 Postdoctoral contracts at:  
Laboratory for High Energy Physics (LHEP), Bern, Switzerland  
Zurich University, Switzerland  
INFN, University of Naples “Federico II”  
  
2018 HDR, Sorbonne University  
2002 - 2005 PhD in Physics, University of Naples “Federico II”  
2001 Degree *summa cum laude* in Physics, University of Naples “Federico II”

## EXTERNAL APPOINTMENTS

2005 1 month Visitor, FERMILAB Laboratory, Batavia, Illinois, USA  
2004 3 months Visitor, Neutrino Physics Laboratory, Nagoya University, Japan  
2003 2 months Visitor, Neutrino Physics Laboratory, Nagoya University, Japan  
2002 1 month Visitor, Neutrino Physics Laboratory, Nagoya University, Japan

## SCIENTIFIC COLLABORATIONS - MAIN CONTRIBUTIONS

### Dark Matter

From 2020 **XeLab** : National Project R&T IN2P3 (2 laboratories)  
Project leader - Principal Investigator LPNHE - Coordination cryogenics infrastructure  
  
From 2010 **XENON** : International Collaboration (27 laboratories, 13 countries)  
Principal Investigator LPNHE (from 2016) - Coordinator Computing and Analysis Tools - Coordinator Xenon Storage and Recovery System - Measurement, evolution and modeling of xenon purity, light and charge yield - Krypton calibration - Secondary scintillation gain studies - Leptophilic sub-GeV Dark Matter - Development data management software - Development users management software - Development and management of hardware computing resources - Cryogenics design and thermal simulations - HAZOP preparation

- From 2009 **DARWIN** : International Collaboration (25 laboratories, 13 countries)  
Principal Investigator LPNHE (from 2016) - Coordinator Liquid Target - Light readout
- From 2009 **ArDM** : International Collaboration (7 laboratories, 4 countries)  
Development Data Processing and Analysis Software - Performances of the light readout system - Particle ID in liquid Argon

## Neutrino

- 2005 - 2010 **OPERA** : International Collaboration (38 laboratories, 11 countries)  
Member of Analysis Steering Board - Development software data reconstruction - Development software data acquisition of nuclear emulsions - Main analysis of tau neutrino signals and its background - Simulations
- 2008 - 2010 **PEANUT** : International Collaboration (20 laboratories, 5 countries)  
Detector construction (nuclear emulsions and scintillating fiber trackers) - Data taking at Fermilab (neutrino NuMi beam) - Data analysis
- 2001 - 2009 **CHORUS** : International Collaboration (25 laboratories, 9 countries)  
Main contributor on final results on neutrino oscillations - Cross sections and branching ratios of charmed particles - Automated and manual nuclear emulsions measurements - Simulations - Statistical data treatment
- 2005 - 2010 **Future neutrino beams** : Sensitivity studies on future neutrino facilities (neutrino factories, SuperBeams, beta beams)

## Instrumentation

- 2010 - 2015 **XEMIS** : Local Project on medical imaging  
Development data processing software - PMTs characterization

## LOCAL AND INTERNATIONAL RESPONSIBILITIES

- From 2020 Project leader R&D XeLab at LPNHE
- From 2019 Co-coordinator of the “Physics” working group of GDR DULP
- From 2018 Member of “Elections Bureau” of LPNHE
- 2017 - 2019 Organiser local seminars of LPNHE
- 2017 - 2020 Member of Advisory Board (“Conseil du Laboratoire”) of LPNHE
- From 2016 Team leader of group XENON at LPNHE
- From 2016 Principal Investigator XENON
- From 2016 Principal Investigator DARWIN
- 2015 Member of CCPI (“Commission Consultative Paritaire Interne”) at Subatech
- From 2014 Coordinator Liquid Target DARWIN
- From 2012 Coordinator Xenon Storage and Recovery System XENON
- From 2011 Coordinator Computing and Analysis Tools XENON
- From 2011 Czar for XENON resources at CC-IN2P3
- From 2012 GRID Administrator for the XENON Virtual Organization
- 2008 - 2010 Member of Analysis Steering Board OPERA
- 2003 - 2005 Responsible of the nuclear emulsions facility of CHORUS in Naples

## PEER REVIEW AND REFEREES

From 2020 1 thesis Jury (referee)  
From 2017 Member of Speaker Bureau XENON  
From 2010 3 review activities for ANR  
From 2010 4 peer review activities for 2 international journals  
2014 Member selection committee MdC Nantes University

## MENTORING, SUPERVISION AND TEACHING

### Thesis supervision

From 2019 S.E.M. Ahmed Maouloud (Sorbonne University), supervision 100%  
2017 - 2020 J.-P. Zopounidis (Sorbonne University). supervision 100%  
2011 - 2014 M. Le Calloch (Nantes University), co-supervision 80%

### Other supervisions

From 2006 Supervised 8 L3 students, 8 M1 students, 10 M2 students  
From 2020 E. Masson, postdoctoral researcher, supervision 100%  
2017 - 2019 E. Lopez-Fune, postdoctoral researcher, supervision 100%

### Teaching

2009 Assistant for Computational Physics (10h) - Master 2 - Naples University  
2009 1 lecture on Computing Methods for Physics (40h) - PhD - Naples University  
2008 1 lecture on Programming languages (20h) - Master 2 - Bern University  
2009 - 2010 1 practical course on Experimental Physics (40h) - Master 2 - Zurich University

### Mentoring

From 2019 Mentoring (“Parrainage”) of 4 PhD students, LPNHE  
From 2019 Member of “Comité suivi thèses” for 2 PhD students, LPNHE

## PUBLICATIONS, TALKS AND VULGARIZATION

### Publications, conferences and workshops

92 papers undergone peer review  
10 talks on international conferences whose 5 having proceedings  
Regular contributions (about 10/year) on OPERA and XENON Collaborations  
9 seminars  
Talks in workshops at any level (local, national, international)  
Organization of national and international workshops (GDR, OPERA)

### Outreach

2005 Set-up and teaching in the exhibition “La Fisica su Ruote” (*Physics on the road*) made by INFN at the Science Center “Città della Scienza”, Naples  
From 2016 Exhibit on Radioactivity at *Fete de la science*, LPNHE

- 2017, 2018      2 series of 8 seminars and on-site missions to College Students in the Paris suburb, Convention CNRS and F93 association. Themes: “Radioactivity” and “Nuclear energy”
- 2015              Realization of a movie clip about Dark Matter detection with XENON1T : <https://youtu.be/VVxUtTr5Xqc>
- 2017              Participation to radio emissions: “Autour de la question”, RFI

## LANGUAGES AND SKILLS

Languages (CEFR)	Italian (mother tongue, C2), English (C1), French (B2)
Operating Systems	VAX/VMS, Linux/Unix, MacOS-X and Windows
Programming languages	Basic, Pascal, Fortran, C, C++, PL/SQL, Python
Scripting languages	HTML, Javascript, awk, csh/bash, PHP
Libraries	CERNLIB, PAW, Root, gnuplot
Databases	Objectivity, ORACLE, MySql, MongoDB
Tools	Mathematica, Matlab, LabVIEW, Grafana, Dash, Bokeh
Bus	VME and serial ports