Curriculum Vitae of FERNANDO FERRONI

Personal Information

Address  
Università degli Studi “Sapienza” di Roma  
Dipartimento di Fisica  
P. le Aldo Moro, 2  
I-00185 Roma, Italy

Phone  
(+39) 06-4991-4613

E-mail  
fernando.ferroni@roma1.infn.it

Nationality  
Italian

Date of Birth  
12 January 1952

Academic Career

1977-1982  
Research Associate, INFN-Roma

1982-1988  
Assistant Professor, Università di Roma “La Sapienza”, Roma

1988-1991  
Associate Professor, Università di Ancona, Ancona

1991-1992  
Visiting Scientist, CERN, Geneva, Switzerland

1992-1999  
Associate Professor, Università di Roma “La Sapienza”, Roma

1998-1999  
Visiting Scientist, SLAC, Stanford, USA

2000-present  
Professor, Università di Roma “Sapienza”, Roma

Research Activity Summary

1974-1979  
R107-R208 experiment at CERN-ISR:  
In charge of the lead glass calibration. Search for resonances decaying in two photons. Single gamma production analysis.

1979-1988  
WA18 (CHARM) Experiment at CERN SPS:  
Scintillator calorimeter construction. Streamer tube upgrade. Analysis of beam dump experiment. Leading role in the study of nucleon structure functions from neutrino scattering with extraction of QCD parameters from $Q^2$ behavior. Author of a review on nucleon structure functions (Phys Rept. 1986). Author of a parametrization of parton densities for use at collider experiments (DFLM, cited 369), a monography on Neutrino Interactions (in Cambridge Monogr. Part. Phys. Nucl. Phys. Cosmology, 1991) and a textbook for students (together with L. Maiani).
1986-1997  L3 Experiment at CERN LEP:
            Responsible of the BGO calorimeter calibration, Analysis of the Z line-shape. Project leader of the scintillating fiber calorimeter construction, installation and operation.

1991-1993  RD22 Experiment at CERN SPS:
            Extraction of a proton beam from SPS by a curved Si crystal by channeling. Presentation of the LHB project to CERN LHCC.

1994-2008  BaBar Experiment at SLAC:
            Design, construction and operation of the BaBar detector. Project leader of the Aerogel PID system. In charge of the tooling for robotic stringing of the Drift Chamber. Member of the management team of Drift Chamber. System Manager of the Instrumented Flux Return detector. Physics Analysis Coordinator. Member of the Executive board. Member of the Technical Board.

            Main results: discovery of CP violation in B-physics, discovery of new families of hadronic resonances, direct CP violation in B-physics, observation of D0 oscillations, discovery of $\eta_b$ state.

2004-present  CUORE Experiment at LNGS:
            Neutrinoless Double Beta decay project. Responsible for the TeO2 crystal calorimeter. Member of the Executive Board (until 2011)

2009-present  Winner of an ERC Advanced Grant for an experiment (Lucifer) on Double Beta Decay based on ZnSe crystals with simultaneous readout of heat and scintillation.

**Professional Career and Memberships**

2000-2005  Member of Scientific Committee of Laboratori Nazionali del Gran Sasso-INFN

2001-2004  Member of Large Hadron Collider Committee (LHCC) at CERN

2004-2010  Chair of Commissione Scientifica Nazionale I of INFN

2005-present  Member of Modane-Frejus Laboratory Scientific Committee

2008-2011  Member of the Joint Standing Committee for the China CAS – Italy INFN Virtual Laboratory

2009  Member of the Scientific Coordination Committee of INFN

2010-present  Member of Scientific Council of IN2P3-CNRS

2011-present  President of INFN

2011-present  Scientific Delegate in CERN Council

2011-present  Member of FALC

2015-present  Chair of Pierre Auger Finance Board
Conferences and School Organization

- International Advisory Committee (and co-founder together with P. Schlein) Beauty Series (International Conference on B-Physics at Hadron Machines (since 1993)
- Committee XX International Symposium on Lepton and Photon Interactions at High Energies July 23-28, 2001 Roma
- Chair of the organization for “The Legacy of E. Amaldi in Science and Society” Conference October 23-25, 2008 Roma
- Director of the School Measurement of Neutrino Mass (Course CLXX) at International School of Physics ‘Enrico Fermi’, 12-17 June, 2008, Varenna
- Director of the School Plasma Physics Acceleration Mass (Course CLXXIX) at International School of Physics ‘Enrico Fermi’, 20-25 June, 2011, Varenna

Academic career of students supervised

in CHARM: Silvio Morganti (Primo Ricercatore INFN Roma), Roberta Santacesaria (Primo Ricercatore INFN Roma), Marcella Diemoz (Dirigente di Ricerca INFN Roma)
in L3: Claudia Cecchi (Ricercatore Universitario Perugia), Mario Campanelli (Academic staff at UC London), Simone Paoletti (Ricercatore INFN Firenze)
in BaBar: Shahram Rahatlou (Professore Associato Roma), Gianluca Cavoto (Ricercatore INFN Roma), Marco Serra (Primo Tecnologo INFN Roma), Francesco Safai-Teherani (Tecnologo INFN Roma), Daniele del Re (Ricercatore Universitario Roma), Cecilia Voena (Ricercatore INFN Roma), Marcello Rotondo (Ricercatore INFN Padova), Viola Sordini (CR2 IN2P3- Lyon), Francesco Polci (CR2-IN2P3-Paris), Maurizio Pierini (Permanent Staff CERN), Francesca Bucci (Ricercatore INFN Firenze), Alessio Sarti (Ricercatore Universitario, Roma), Francesco Renga (Ricercatore INFN Roma), Emanuele di Marco (Ricercatore INFN Roma)
The following students have now a PostDoctoral position: Alessia D'Orazio (INFN Pavia), Elisabetta Baracchini (Marie Curie at LNF), Antonino Sergi (CERN), Elisabetta Prencipe (Post-doc Juelich-Germany), Francesca Pastore (Research Assistant Royal Hollow Fellow at Un. London), Giacinto Piaquadio (Post-doc Stanford-USA)
in CUORE/Lucifer: Fabio Bellini (Ricercatore Universitario Roma), Marco Vignati (Primo Ricercatore INFN-Roma), Laura Cardani (Dicke fellow at Princeton University), Gabriele Piperno (Post-doc at LNF)
Selected Publications

1. E. Amaldi et al., SINGLE DIRECT PHOTON PRODUCTION IN P P COLLISIONS AT S**(1/2) = 53.2-GEV IN THE P(T) INTERVAL 2.3-GEV/C TO 5.7-GEV/C, Nucl.Phys.B 150:326-344,1979.

2. F. Bergsma et al., EXPERIMENTAL STUDY OF THE NUCLEON STRUCTURE FUNCTIONS AND OF THE GLUON DISTRIBUTION FROM CHARGED CURRENT NEUTRINO AND ANTI-NEUTRINOS INTERACTIONS, Phys.Lett.B 123:269,1983.

3. M. Diemoz, F. Ferroni, E. Longo, NUCLEON STRUCTURE FUNCTIONS FROM NEUTRINO SCATTERING, Phys.Rept. 130:293-380,1986.

4. M. Diemoz, F. Ferroni, E. Longo, G. Martinelli, PARTON DENSITIES FROM DEEP INELASTIC SCATTERING TO HADRONIC PROCESSES AT SUPER COLLIDER ENERGIES, Z.Phys.C 39:21,1988.

5. J.A. Bakken et al., RESULTS ON THE CALIBRATION OF THE L3 BGO CALORIMETER WITH COSMIC RAYS, Nucl.Instrum.Meth.A 343:456-462,1994.

6. B. Adeva et al., A DETERMINATION OF THE PROPERTIES OF THE NEUTRAL INTERMEDIATE VECTOR BOSON Z0, Phys.Lett.B 231:509,1989

7. G. Basti et al., THE L3 LEAD SCINTILLATING FIBER CALORIMETER, Nucl.Instrum.Meth.A 374:293-298,1996.

8. H. Akbari at al, FIRST RESULTS ON PROTON EXTRACTION FROM THE CERN SPS WITH A BENT CRYSTAL, Phys.Lett.B 313:491-497,1993

9. B. Aubert et al., THE BABAR DETECTOR, Nucl.Instrum.Meth.A 479:1-116,2002.

10. E. Borsato et al., THE AUTOMATED STRINGING SYSTEM FOR THE BABAR DRIFT CHAMBER, Nucl.Instrum.Meth.A 451:414-426,2000.

11. E. Borsato et al., BABAR FORWARD ENDCAP UPGRADE, Nucl.Instrum.Meth.A 539:155-171,2005.

12. B. Aubert et al., OBSERVATION OF CP VIOLATION IN THE B0 MESON SYSTEM, Phys.Rev.Lett. 87:091801,2001.

13. B. Aubert et al., OBSERVATION OF A NARROW MESON DECAYING TO D+(s) P10 AT A MASS OF 2.32 GEV/C**2, Phys.Rev.Lett. 90:242001,2003.

14. B. Aubert et al., OBSERVATION OF DIRECT CP VIOLATION IN B0 -> K+PI- DECAYS, Phys.Rev.Lett. 93:131801,2004.

15. B. Aubert et al., EVIDENCE FOR D0-ANTID0 MIXING, Phys.Rev.Lett. 98:211802,2007.

16. J. W. Beeman et al., DISCRIMINATION OF ALPHA AND BETA/GAMMA INTERACTIONS IN A TeO2 BOLOMETER, Astropart. Phys. 35:558 (2012)

17. CURRENT STATUS AND FUTURE PERSPECTIVES OF THE LUCIFER EXPERIMENT, J. W. Beeman et al., Adv. High. Energy Phys. 2013 237973 (2013)
18. J. W. Beeman et al., PERFORMANCES OF A LARGE MASS ZnSe BOLOMETER TO SEARCH FOR RARE EVENTS, JINST 8:P05021 (2013)

19. L. Cardani et al., FIRST BOLOMETRIC MEASUREMENT OF THE TWO NEUTRINO DOUBLE BETA DECAY OF 100Mo WITH A ZnMoO4 CRYSTAL ARRAY, J. Phys. G41, 075204, 2014

20. K. Alfonso et al., SEARCH FOR NEUTRINOLESS DOUBLE-BETA DECAY OF 130Te with CUORE0, nucl-ex/1504.02454, 2015 submitted to Phys. Rev. Lett

**Invited Lectures**

Dozens of talks given in national and international institutes, workshops schools and conferences. A few opening and summary talks.

**Bibliometric indexes**

>800 papers published on refereed journal.
Total number of citations > 20000
h-index: 65
(source : ISI-Thomson)