



Curriculum Vitae of Prof. Francesco Forti

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Current Position: Full Professor of Physics, Department of Physics, University of Pisa

Education: 1985 – 1988 Graduate school, Physics, Scuola Normale Superiore, Pisa
(note: never formally obtained a PhD title)
1985 M.Sc. Physics, Pisa University and Scuola Normale Superiore

Professional Record: 2016 – present, Full Professor of Physics, University of Pisa
2005 – 2016, Associate Professor of Physics, University of Pisa
1996 – 2005, Research faculty at INFN-Pisa
1992 – 1993, Visiting Scientist at Lawrence Berkeley Laboratory
1990 – 1996, Staff researcher at INFN-Pisa
1988 – 1990, Postdoc at INFN-Pisa

Short biography

In my professional career I have been mainly working on instrumentation development, in particular silicon detectors, and their application to advancing flavor physics in the context of e^+e^- colliders. After graduating from Pisa University and Scuola Normale Superiore in 1985, I participated in the ALEPH experiment, in particular contributing to the development of double-sided silicon detectors, employed for the time in the ALEPH minivertex. In 1992 I spent a year at the Lawrence Berkeley Laboratory working on the development of pixel detectors for the SDC detector at SSC. After the cancellation of the SSC I joined the Babar experiment in 1993, taking on the responsibility for building the Silicon Vertex Tracker which was successfully installed in 1999 and operated until 2007. I contributed to several analyses in Babar, whose discovery of CP violation in the B mesons remains to the present day a cornerstone of flavor physics.

While continuing the development work on various aspect of silicon technology, I started to explore the case and feasibility of a high luminosity B-Factory. I was one of the initiators of the SuperB proposal, aiming at the construction of a Super B-factory in the Frascati area. In the course of several years I have been coordinating the international detector collaboration, leading to the publication of the technical design report in 2012. After the cancellation of the SuperB project, in 2013, I lead the Italian contingent joining the Belle II experiment at KEK, directly contributing to the construction of the Silicon Vertex Detector that has started operation in 2019. The Belle II data sample will contribute enormously to our understanding of the Standard Model, and hopefully shed light on the various anomalies currently detected in flavor physics observables. I am currently Upgrade Coordinator of the Belle II experiment, exploring possible upgrade options on different timescales.

Throughout my career I have been teaching various courses at the Pisa University, as detailed below. I have also systematically engaged in outreach activities, in particular giving public lectures and lectures for high school students. I have received numerous appointments as reviewer both at the national and international level, culminating in the chairmanship of the CERN LHC Committee, from January 2015 to April 2019. In November 2019 I have been elected Secretary of the Italian association USPID, Union of Scientists for Disarmament.

Research Experience:

- Participation in the AIDAInnova European project, 2021-present
- Participation in the Jennifer/Jennifer2 European RISE Projects, 2015-present
- Construction and operation of the Belle II SVD, 2013-present
- Participation in the Belle-II Experiment, 2013-present
- Development of graphene-based silicon detectors, 2017-2019
- Development of a focal plan for X-ray detection at FEL machines (PixFEL), 2014-2016
- Coordinate the SuperB Detector group (2007 – 2013)
- Editor of the SuperB Detector Technical Design Report (2011 – 2012)
- Develop the physics case and detector design for the SuperB project (2005 – 2013)
- Development of monolithic CMOS active pixel systems (2003 – 2013)
- Analysis of $\tau \rightarrow IK_s$ lepton flavour violating decays with the Babar experiment (2005 – 2008)
- Study of the physics reach of a very high luminosity B Factory (2002 – 2005)
- Development of a parametrized detector simulation code used for high luminosity B Factory Physics studies (2002 – 2003).
- Analysis of CPT symmetry limits using B decays into CP and flavor eigenstates with the Babar experiment (2002 – 2003)
- Optimization and construction of the replacement resistive plate chambers for the Babar forward endcap (2001 – 2002)
- Development of double-sided silicon strip detectors with integrated coupling capacitors for the Babar Silicon Vertex Tracker (1994-1995)
- Design and construction of the Babar Silicon Vertex Tracker (1993 – 1999)
- Participation in the Babar Experiment, 1993-present
- Development of pixel detectors for SDC experiment (1992-1993)
- Participation in the ALEPH Experiment, 1985-1996

Publications:

More than 800 publications. All time H-index: 98. H-index of past 15 years: 69.

Teaching experience:

- Instrumentation for Fundamental Interaction Physics course for Physics master (2021– present)
- Fundamental Interactions course for Physics master students (2019 – present)
- Physics Laboratory 3 course for Physicists, Pisa University (2004, 2008, 2012 – 2019)
- Thermodynamics for Biomedical Engineering, Pisa University (2006)
- General Physics for engineering students, Pisa University (2005 – 2012, 2019 – present)
- Lessons on “Physics perspectives at B-Factories” and “e+e- Colliders: the luminosity frontiers”, for the “Particle Physics” course, Physics Graduate School, Pisa (2003, 2004)
- Lessons on “Semiconductor detectors” for Nuclear and Subnuclear Physics Laboratory, University of Pisa (1998,1999)

Institutional Appointments:

- Coordinator of the UNIPI Physics Department "Excellent Department" project, 2023 – present
- Member of the UNIPI Engineering School Didactic Paritetico Committee, 2022 – present
- Coordinator of the Physics Department Fundamental Interactions Group, 2020 – present
- Representative of the UNIPI Physics Department in the Engineering School, 2020 – present
- Member of the UNIPI Physics Graduate School Academic Board, 2009 – present
- Delegate for research by UNIPI Physics Department, 2017 – 2020
- Member of the UNIPI Physics department Giunta, 2016 – 2020 and 2007 – 2010
- Delegate for Technology Transfer by INFN Pisa, 2012 – 2013

- Italian representative, HEP Technical Advisory Subcommittee of HEP-CCC, 2000 – 2003
- Member, INFN national computing committee, 1998 – 2001

Scientific Appointments:

- Member, ICFA Panel on Instrumentation, Innovation & Development, 2021-present
- Member, Steering group for ILC-prelab WG3, 2021-present
- Upgrade coordinator, Belle-II experiment, 2018-present
- Chair, Belle-II Executive Board, 2014-2019
- Member, Belle-II Executive Board, 2014-present
- Chair, Belle-II SVD Quality Control Group, 2015-present
- Chair, Belle-II SVD Institutional Board, 2014-2016
- National Coordinator, Belle-II INFN Collaboration, 2013-2014
- Co-chair of SuperB Detector Technical Board, 2011 – 2013
- Co-convenor, SuperB project, detector R&D, 2006 – 2011
- National coordinator, P-SuperB INFN Project, 2008 – 2011
- Local coordinator of AIDA european project, 2010 – 2014
- Spokesperson, INFN SLIM5 R&D Project, 2006 – 2008
- Member, BaBar experiment, Executive board, 2003 – 2009
- Co-chair, Babar experiment, SVT Long term task force, 2003-2004
- Co-chair, Babar experiment, 10^{36} Study group, 2002-2003
- Member, Babar experiment, Long term planning task force, 2002
- Member, Babar experiment, Instrumented Flux Return steering committee, 2001-2002
- Co-project manager, BaBar experiment, Silicon Vertex Tracker subsystem, 1994 – 2000

Organization of conferences and workshops:

- Member of the Steering Committee of TIPP conference series, 2021 - present
- Member of the International Advisory Committee of VERTEX workshop series, 2016 - present
- Chair, Pisa Meeting on Advanced Detectors, 2021 (postponed to 2022)
- Chair, Vertex Workshop, 2016
- Pisa Meeting on Advanced Detectors in 2003, 2006, 2009, 2012
- Hadron Collider Physics in 2007
- Babar collaboration meeting in 2003, 2005, 2008
- Several SuperB Workshops in 2008 - 2012

Review Committee Appointments:

- Member of the FNAL Long Baseline Neutrino Committee, 2021 – present
- Chair of the INFN Darkside Review Committee, 2021 - present
- Reviewer for Catalan Institution for Research and Advanced Studies, 2020
- Reviewer for Swiss Science Foundation, 2018, 2019
- Chair, CERN Large Hadron Collider Committee, 2015-2019
- Reviewer for Italian Government SIR projects, 2014
- Reviewer for French Research projects, 2013, 2017
- Reviewer for ERC projects, 2009, 2011, 2013, 2015, 2017, 2020, 2021
- Member, U.S. NSF-DOE LHC Joint oversight group, 2009
- Member, CERN Large Hadron Collider Committee, 2004 – 2008.
- Chair, INFN Grid and LHC computing review committee, 2004 – 2007
- Reviewer, Italian Government Research Department, 2003 – 2006
- Member, Fermilab Technical Review Committee, 2001 – 2002.
- Member, INFN Atlas experiment review committee, 1996 – 2004