

Dr. Susanna Guiducci - Curriculum Vitae

I am currently INFN team leader of ARIES (EU project 730871), a four years project on “Accelerator Research and Innovation for European Science and Society”, which started in May 2017.

I got my degree in Physics at Rome University “la Sapienza” in 1975.

I have been a staff scientist at the LNF Frascati, Italy, since 1977 in the Accelerator Division, Accelerator Physics Group. I have been working on optics and beam physics for synchrotron light sources and electron positron colliders. I participated at several different Synchrotron Light Source projects as European Synchrotron Radiation Project for ESRF, Grenoble, France and Elettra SLS in Trieste, Italy. I had a leading role in the design commissioning and operation of the DAΦNE Φ -factory, the 0.5 GeV LNF electron-positron collider [1].

As a member of the International Collaboration TESLA, I coordinated the Damping Ring work for the TDR of the TESLA Superconducting Electron-Positron Linear Collider [2]

I was one of the worldwide selected members of the ILC Global Design Effort (GDE) from 2005 to 2012. Internally to the GDE, I had the responsibility of Accelerator System Leader for the two Damping Rings. I was the Group Leader of the International Linear Collider (ILC) Accelerator Activities at the Istituto Nazionale di Fisica Nucleare (INFN).

In the past years I was the INFN scientific leader responsible for two large EU Projects dedicated to accelerator research and development: CARE (project N. RII3-CT-2003-506395) [3], from 2004 to 2008, and EuCARD (grant N. 227579) [4], from 2009 to 2013. For the Project EUROTEV “European Design Study Towards a Global TeV Linear Collider” (grant N. 011899, years 2005 – 2008) [5], I was both the INFN scientific leader and the coordinator of the WP3 Work package “Damping Rings”. From 2013 to 2017 I was one of the Coordinators of the WP6 Work package “Low Emittance Rings” within the European Project EuCARD-2 “Enhanced European Coordination for Accelerator Research & Development” (grant N. 312453) [6].

From 2009 to 2013 I was responsible of the design of the injection system for the Italian SuperB Factory project [7] and for the Tau-charm Factory proposal [8].

From 2011 to 2017 I was a member of the European Physical Society Accelerator Group (EPS-AG) elected board.

I have presented several invited papers and talks and am author of more than hundred publications. I have taught at the CERN CAS accelerator school (Julich, Germany, 1990) and at the ILC accelerator school (Sokendai, Japan, 2006 and Indore, India, 2012). I have served on numerous review committees and panels and as a chair at several conferences and workshops, as the latest I have organized the “Low Emittance Rings 2014 Workshop” at LNF, Frascati.

Links and references:

[1] G. Vignola and DAΦNE Project team, “DAΦNE, The Frascati Φ -factory”, pag. 1993, Proceedings of PAC'93, Washington, 1993.

- [2] TESLA TDR - DESY 2001-011.
- [3] CARE <http://esgard.lal.in2p3.fr/Project/Activities/Current/>
- [4] EuCARD <http://eucard-old.web.cern.ch/>
- [5] EUROTeV <http://www.eurotev.org/>
- [6] EuCARD-2 eucard2.web.cern.ch
- [7] M.E. Biagini, P. Raimondi, J. Seeman, "SuperB Progress Report: Accelerator", December 2010, arXiv: 1009.6178v3
- [8] M.E. Biagini et al, "Tau/Charm Factory Accelerator Report", INFN Report INFN-13-13/LNF, September 2013, arXiv:1310.6944

Alessandro Variola

CURRICULUM VITAE

Dati personali

Nome	Alessandro
Cognome	Variola
Data di nascita	21 Aprile 1966
Luogo di nascita	Porto Alegre (Brasile)
Nazionalità	Italiana - Brasiliana
Stato civile	Coniugato
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Titoli di Studio

Ph.D. in Fisica Sperimentale, Specializzazione: "Grandi Apparatı Sperimentali" - Fisica degli Acceleratori di Particelle, Università di Paris-Sud. - Relatore: Dr. Robert Chehab
Titolo: "Use of Optical Radiation for the study of Electron Beam Spatio-Temporal Characteristics. TTF Application"

Laurea in Fisica Sperimentale, Specializzazione - Fisica degli Acceleratori di Particelle, Università di Trieste - Relatore: Prof. Mario Puglisi
Titolo: "Teoria Elettromagnetica dei Campi Scia. Interazione Fascio - Cavità"

Esperienza Professionale

2014-2017/Laboratori Nazionali di Frascati (I.N.F.N) / Frascati / Italia

Ricercatore a tempo indeterminato, Dirigente di Ricerca

Attività scientifica:

2014-2017) Machine leader del progetto ELI NP GBS

Insegnamento:

2015-2016) Professore a contratto all'Università Sapienza di Roma, corso di 'Fisica Moderna'
2016) Organizzatore e promotore della scuola internazionale ELIS, Natal, Brasile

Altri incarichi:

2015-2017) Coordinatore del Machine Advisory Committee dell'INFN
2017) Coordinatore oer il comitato di project management dell'INFN

2004-2014 /Laboratoire de l'Accelérateur Lineaire (C.N.R.S) / Orsay / Francia

Ricercatore tecnologo a tempo indeterminato. Tecnologo di Classe Eccezionale

Attività scientifica:

2008-2014) Coordinatore di progetto:

- High Power Couplers,
- ThomX,
- ILC e CLIC sorgenti di positroni,
- Machine leader del progetto SuperB

Collaborazioni scientifiche nei progetti : PLIC, PHIL, PHIN, ILC e CLIC

2008- 2012) Programmi europei :

Coordinatore per il C.N.R.S dei programmi CARE ed EUCARD

Membro del governing board di CARE ed EUCARD

Responsabilità scientifica dei work packages sulle tematiche:

EUCARD -AccNet, Crab Waist, SRF, Couplers production

CARE High Power Couplers, ILCHgrade

Insegnamento:

2009-2015) Professore a contratto all'Università di Paris-Saclay, corso 'fisica degli acceleratori'

Direzione della tesi di Iryna Chaikovska.

Controrelatore di varie tesi di dottorato. Corso di introduzione alla fisica degli acceleratori

Altri incarichi:

2008-2014) Capo dipartimento fisica degli acceleratori

Incarichi al LAL-CNRS: Membro del consiglio scientifico del laboratorio LPSC Grenoble, membro consiglio scientifico del LAL, membro della commissione sulla valutazione delle future tecniche di accelerazione con V.Malka e J.M.Filhol

Organizzazioni di conferenze: Posipol 2007, SuperB 2007, SuperB 2009

Conference Boards : IPAC 2011, IPC Posipol, LINAC, IAC Jefferson lab positron sources.

2001-2004 / C.E.R.N. (I.N.F.N. Genova) / Ginevra / Svizzera

Ricercatore a tempo determinato

Attività scientifica:

2002) Physics coordinator dell'esperimento ATHENA

2002-2004) Run coordinator dell'esperimento ATHENA

2001-2004) Responsabile responsabile del collegamento tra l'esperimento ATHENA e il team della macchina acceleratrice A.D

1998-2001 / CERN / Ginevra / Svizzera

Ricercatore a tempo determinato

1998 – 2001 Fellow CERN, gruppo BI-SL

Attività scientifica:

- Responsabile dello sviluppo di monitor di fascio a radiazione di transizione, luminescenza e a spettro di forza di carica spaziale nell'ambito dei test per LHC.
- Partecipazione allo sviluppo del RFQ deceleratore per la macchina AD del CERN

1995-1998 Laboratoire de l'Accélérateur Linéaire (L.A.L.) / Orsay (Parigi) / Francia (Tesi Ph.D.)

Studente di dottorato

Attività scientifica:

Partecipazione allo sviluppo del preiniettore della Tesla Test Facility, attività incentrata prevalentemente nel campo della diagnostica di fascio.

1993-1995 / Laboratorio ELETTRA – Sincrotrone Trieste / Trieste / Italia

Ricercatore a tempo determinato

Attività scientifica:

Partecipazione al commissioning del linac e allo studio dei sistemi SLED

1991-1993 / Laboratorio ELETTRA – Sincrotrone Trieste / Trieste / Italia (Tesi di Laurea)

Attività scientifica:

Tesi di Laurea sulla tematica dell'interazione fascio cavità

G. Bisoffi - CURRICULUM VITAE

Giovanni Bisoffi CURRICULUM VITAE

PERSONAL INFORMATION

Name	GIOVANNI BISOFFI
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Nationality	Italian
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Birth date	NOVEMBER 14, 1962
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EDUCATION

• Date	March 1987
Institution	Physics Course at the Faculty of Science (University of Padova, I)
• Diplome	Degree in Physics

• Date	July 1989
• Institution	Ruprechts-Karl Universität and Max Planck Institut für Kernphysik in Heidelberg (D)
• Diplome	PhD in Physics

LANGUAGES

MOTHER TONGUE	ITALIAN
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OTHER LANGUAGE (CERTIFICATE)	ENGLISH (CERTIFICATE OF PROFICIENCY IN ENGLISH, UNIVERSITY OF CAMBRIDGE)
OTHER LANGUAGE (CERTIFICATE)	GERMAN (ZERTIFIKAT "B2", GOETHE INSTITUT)

CAREER STEPS

May 1988 – Nov 2000	TECHNOLOGICAL RESEARCHER OF LEVEL 3 (INFN) – TITLE OF "TECHNOLOGICAL RESEARCHER"
Dec 2000 – Dec 2007	TECHNOLOGICAL RESEARCHER OF LEVEL 2 (INFN) – TITLE OF "FIRST TECHNOLOGICAL RESEARCHER"

<p style="text-align: center;">Since Jan 2008</p>	<p>TECHNOLOGICAL RESEARCHER OF LEVEL 1 (INFN) – TITLE OF “DIRECTOR OF TECHNOLOGICAL RESEARCH”</p>
<p style="text-align: center;">COORDINATION AND DIRECTION OF FUNCTIONAL UNITS AND PROJECTS</p>	
<p style="text-align: center;">•Dates</p>	<p>Since October 1, 2005</p>
<p style="text-align: center;">• Role</p>	<p>Head of the Accelerator Division at INFN-Laboratori Nazionali di Legnaro (Encl.5)</p>
<p style="text-align: center;">• Structure Breakdown</p>	<p>The Accelerator Division is structured in 6 units (and 3 sub-units), named “Accelerator Operation”, “Sources and Injectors”, “Accelerator Physics and Technology”, “Electrostatic Accelerators for Applications”, “Research and Development”, “Machine Technical Plants”</p>
<p style="text-align: center;">• Personnel</p>	<p><u>50 individuals</u>: 25 physicists and engineers, 24 technicians e 1 secretary</p>
<p style="text-align: center;">• Main duties and responsibilities</p>	<p>The candidate has the full responsibility over accelerator-related activities at Laboratori Nazionali di Legnaro (LNL), in particular those made available to national and international users. He takes care of their efficiency and operational reliability, within the yearly budget made available for the structure (1,3 M€ on average).</p> <p>He responds directly to the director of LNL and is an active member of the Laboratory Council. He reports periodically about the state and plans of accelerator activities to the international committees PAC (Programme Advisory Committee) e CVI (International Evaluation Committee of INFN). He stays in close contact and collaboration with the Heads of the Research Division and Technological Division, as well as with physicists, engineers and technicians of the Laboratory.</p> <p>He coordinates the management of the local accelerator facilities, as well as the related research and development. The unit heads, taking care of accelerator operation, beam dynamics and diagnostics, vacuum systems, radiofrequency, control and cryogenics, technical plants, report to him.</p> <p>He has a leading role in the strategic planning of the Accelerator Division (in the short and medium terms) and in the related operational decisions: in particular the upgrade projects of PIAVE and ALPI linacs and the SPES project for a mid-term RNB facility at LNL. He proposes and manages a budget for operation, research and activities related to the realization of new accelerators.</p> <p>He promotes the potentialities and the projects of LNL in the field of particle accelerators through national and international collaborations and through the organization of meetings and conferences (e.g. he promoted the “International Conference on Heavy Ion Accelerator Technology”, hosted by LNL in June 2009 with his chairmanship).</p>
<p style="text-align: center;">• Main developments in the structure</p>	<p>At the beginning of his mandate in 2005, LNL accelerators are in a critical moment: the electrostatic accelerator Tandem XTU cannot exceed the 80% of its nominal voltage, the SC linac ALPI is going through a very delicate maintenance of its cryogenic system, the SC injector PIAVE (of which the candidate has been project leader till then) is in the commissioning phase. Through a careful coordination of the activities of all the Division units, the situation is fully recovered at the end of 2006: the Tandem is back to its full acceleration voltage (14,5 MV), ALPI reaches a record accelerating voltage (49 MV), while PIAVE is fully operational, with an initial selection of beams for the LNL users community. Since then, Tandem, PIAVE and ALPI accelerators worked with a very high degree of availability. Since 2013, it was decided to work with ALPI and PIAVE every second semester, while the Tandem worked continuously, so as to both spare on the LNL electricity bill (at the advantage of SPES budget) and to devote more manpower to the project itself.</p>

•Date	September 19, 2003 – September 30, 2005
• Role	Deputy Director of Laboratori Nazionali di Legnaro (INFN) – Aiuto di Direzione
• Main duties and responsibilities	“Planning of the LNL activities” is delegated by the Director to the candidate
• Activities	The appointment letter mentions the “aim of making the initiatives of the Divisions, on the priority activities planned by the Director, sharper and better coordinated. He coordinates the hardware commissioning of those components which shall allow the linac ALPI to be fully operational together with the injector PIAVE. This activity is broken down in a series of projects: 1. Operation of the ECR source on the HV platform; 2. PIAVE; 3. The low velocity section of ALPI; 4. The cryogenic fluid distribution system. He coordinates the sharing of the manpower in support to these projects, in respect of the duties related to the management of the laboratory structures and the operational machines. He reports to both the Director of LNL and to the Users’ Committee, which evaluates these activities quarterly.

•Dates	May 6, 2004 – September 30, 2005
• Role	Leader of the PIAVE Project and Head of the Unit ITAM
•Dates	December 5, 2002 – May 5, 2004
• Role	Deputy Head of the PIAVE Project
• Structure Description	The ITAM Unit is the main operational structure, taking care of the setup and full commissioning of the heavy ion injector PIAVE.
• Personnel	<u>4 individuals</u> (2 physicists and 2 engineers) in the Unit; <u>30 individuals</u> (20 physicists and engineers and 10 technicians) in the PIAVE project
• Main duties and responsibilities	In the final phase of the production of the SC RFQ cavities (of which the candidate has had since the beginning the full responsibility), he takes care of the whole injector project, as the Deputy Head and then as the Head of the project. In particular, he coordinates and controls the various project activities, in close coordination with the people in charge of each of them (beam dynamics, diagnostics, cryogenics and cryostats, rf equipment, vacuum and control systems). The coordination activity is conducted also through twice-monthly meetings. He coordinates the workplan of physicists, engineers and technicians in agreement with the Head of the Accelerator Division and in respect of the operational priorities of the Tandem and ALPI accelerators.
• Main developments	<ul style="list-style-type: none"> - Completion of the second of the two SRFQ’s; test of both in the operational environment; fulfillment of the alignment specs; - Commissioning of the cryogenic system, in respect of the tough specifications of maximum pressure variations; - Installation and tests of the QWR SC resonators; - Debugging of the SRFQ cryostat; - Infrastructure preparation of the injector hall. <p>In Summer 2005 this preparatory work is concluded: the first beam tests have been performed and are conform to the project specifications. In Spring 2006, the commissioning is declared successfully concluded with the realization of the first official experiments, approved by the PAC committee.</p>

**PROJECT AND REALIZATION OF
ACCELERATING FACILITIES**

•Date	Since 2011
• Role	In SPES: Accelerator Coordinator, Head of the Project Management Office, Head

	of Work-Package “RNB Accelerator”
• Topic	Project of Radioactive Ion Beam Facilities
• Goals	Working in close relationship with the Project Leader, who has a Nuclear Physics background, he coordinates all work-packages related to the construction of the accelerator, i.e. Control (WP-B4), Cyclotron (WP-B5), Exotic Beams (WP-B6), Beam Transport and Selection (WP-B7), RFQ (WP-B8), Mechanical Engineering (WP-B10), Vacuum Systems (WP-B11), while he leads WP-B9 (RNB Accelerator). He has been appointed in 2012 by INFN to be a member of the cost evaluation committee of the project. He leads the Project Management Office.

•Date	1995-2002
• Role	Realizations in the field RF Superconductivity
• Role	The very first SC RFQs ever built worldwide for an operation-oriented accelerator; they are the first accelerating elements of the Heavy Ion Injector PIAVE.
• Topic	Thanks to the heavy ion injector PIAVE, the LNL heavy ion accelerator complex accelerates masses beyond A=100 with a significant increase of beam current on target of all ion species. The SC RFQ's work in CW mode, consistently with the ALPI booster. They are the first SC RFQ's built worldwide with the goal of going beyond the R&D phase and to accelerate beams on a working accelerator. Their design had to be a successful compromise between the technologies and the project choices of typical NC RFQ's with the best technologies and design choices of superconducting resonators.
• Design (1995-1996)	Starting from the beam dynamics design, setup by the LNL experts, the candidate has taken care of the RF and mechanical project of the SC RFQ's since the very beginning. Main steps: <ul style="list-style-type: none"> - analytical and computational optimization of the cavity geometry with respect to the construction options, maximum surface EM fields, stored energy, cavity size, cryostat connections, mechanical vibrations, frequency tuning; - detailed engineering and design. In this phase the candidate has received the collaboration of 1 physicist and 1 engineer and of that of the Department of Mechanical Engineering of the Universities of Padova and Ferrara, and the Department of Electronic Engineering of the University of Naples (n.3 degree these have been written in this context).
Prototype development (1996-1997)	<ul style="list-style-type: none"> - Development of a full scale stainless steel prototype of cavity SRFQ2 to check all the realization steps. - Coordination of the project of cavity SRFQ1, carried out in collaboration with the University of Kyoto (J) <i>In this phase the candidate has received the collaboration of two physicists of the Kyoto University (Nuclear Science Research Facility), in the framework of a collaboration of which he carries the scientific responsibility; two mechanical technicians of LNL; department of Mechanical Engineering of the Universities of Padova and Ferrara; one scientist of the Institute for Theoretical and Experimental Physics (Moscow, Russia) and one physicist of LNL. He has closely followed and chaired the complex Electron Beam Welding phases of the cavity components, performed at a dedicated company.</i>
Realization and tests (1997-2002)	Activities chaired by the candidate: <ul style="list-style-type: none"> - All possible tests on the stainless steel model (EM field distribution, frequency tuning, measurement of mechanical vibrations, control of EM frequency sensitivity with respect to vacuum and external pressure, temperature change, chemical etching); - Realization a a 1:2 Al model of SRFQ1; - Executive project of SRFQ2;

	<ul style="list-style-type: none"> - Construction of SRFQ2 in Nb and Ti, with the contribution of DESY and CERN; - Setup of the test laboratory and realization of the 4 K tests of SRFQ2, exceeding the specifications in terms of accelerating field; - Executive project of SRFQ1; - Construction and similar tests on SRFQ1 <p>Both RFQ's exceed the specifications in terms of accelerating field and are ready to be tested and commissioned in the accelerator hall.</p>
Design and construction of the Ladder resonator (2000-2007)	A novel very compact superconducting resonator (called Ladder cavity), aimed at accelerating proton beams with a relativistic factor $\beta=0,12$, has been proposed designed, built and successfully tested by the candidate and coworkers. It is an interesting option to replace NC DTL structures after a proton RFQ, leaving the option open of a fully SC linac. The structure was developed in the Eurisol accelerator framework.

•Dates	1994-1995
• Role	Technological Researcher in the LNL Radiofrequency Group
• Responsibilities	Development of a prototype of SC RFQ
• Activity	He optimizes with analytical and computational methods a SC RFQ prototype and develops three different AI models, followed their realization, conducted the experimental tests. Leader of the Radiofrequency Team of the "Progetto Nuovo Iniettore (PIAVE)" (Encl.12)
•Dates	1992-1993
• Role	Technological Researcher of the ALPI Project
• Responsibilities	Member of the RF Group in the commissioning of the ALPI linac
• Activity	He is a member of the commissioning group of the ALPI linac with respect to all its components (radiofrequency, beam transport, diagnostics, cryogenics, bunching, magnets and vacuum), during all the physics experiments performed during the accelerator test phase. He writes the operation manual of the accelerating resonators.

•Date	2001-2010
• Role	Work-Package leader of the SPES and Eurisol-DS projects
• Topic	Project of Radioactive Ion Beam Facilities
• Activity	<p>Within the Technical Committee of the SPES project (2002-2005), aimed at building a RIB Facility at LNL, he leads the task "Determination of cost and time schedule of the Project".</p> <p>Since 2006: Leader of the task "RNB Accelerator" of the SPES Project.</p> <p>The candidate takes care of the best adaptation of the PIAVE-ALPI facility for the acceleration of exotic species generated in the production target. He has written a conceptual project and then chaired the development of this part of the Technical Design Report, evaluated cost and time schedule, in accordance with the regular and continued use of the linacs for the current scientific activity hosted by LNL.</p> <p>1. Eurisol-DS</p> <p>Within the European project "Eurisol-DS", aimed at the design of a RNB facility with a primary proton linac with energies up to 1 GeV, he is the leader of the Italian team in the Work-Package 6 (RNB Accelerator). He coordinates a group of 3 physicists for the design of the accelerator front-end, based on SC RFQ's.</p> <p><u>Invention and construction of a low-beta resonator for high-current linacs</u></p> <p>In the SPES and Eurisol-DS frameworks, the candidate has proposed and developed a fully innovative resonator for the very low beta part of the driver accelerator. This</p>

	resonator, called "Ladder" cavity, is extremely compact and efficient and would allow significant saving in the accelerator cost. He has coordinated the collaboration of 1 physicist and followed two degree theses in Physics and Mechanical Engineering.
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•Dates	1989-1991
• Role	Design and Construction of an ECR Ion Source
• Topic	Project, installation and tests of an ECR Ion Source at LNL
•	He takes care of the final phase of the project and the installation of the ECRIS in a test laboratory. He is in charge of the project of the beam extraction system: his design is adopted also by the SC-ECR group at MSU (USA). His participation ceases after the successful commissioning of the ion source with beams of noble gases.

•Date	1987-1989
• Role	Ion cooler storage rings (PhD thesis)
• Topic	Development of the setup for maximizing the amount of beam current stored in the heavy ion storage ring TSR (Test Storage Ring) at the MPI-K in Heidelberg.
• Activity	He develops the project and performs the related simulations; adapts a resonant cavity acquired from CERN to the project purpose, optimizing its phase and amplitude docking systems. He is member of the TSR commissioning team, where a beam current increase of a factor 800 is achieved, in agreement with his predictions. He has evaluated analytically the limit of maximum current which can be stored in the ring, with respect to space charge and collective instabilities. He has taken active part in the whole ring commissioning, including the very first experiments of heavy ion electron cooling.

•Date	1986-1987
• Role	Mass spectrometers (degree thesis)
• Topic	Evaluation of high voltage (HV) insulation in high vacuum, within the project CAMEL, a high resolution heavy ion mass spectrometer
• Activity	Analysis of the HV performance of a large parallel plate capacitor. Investigation of the electrostatic field distribution, setup and realization of the experiments. These results are still a reference in the relevant literature. They are, e.g. used in the experimental phase of the Neutral Beam Injector of the ITER project, in a presently running collaboration between INFN and CNR (National Research Center).

**MONITORING AND EVALUATION
OF INTERNATIONAL PROJECTS
PARTICIPATION IN SCIENTIFIC
COMMITTEES**

•Date	Since 2011
• Role	Scientific Evaluator of the Russian Skolkovo Innovation Center
	The Skolkovo Innovation Center is a scientific and technological centre for the development and commercialisation of advanced technologies. Project approval is submitted to the assessment of international referees. The candidate belongs to the refereeing group " Nuclear Technologies ".

•Date	2014-2020
• Role	Member of the Board of the EPS-AG (Accelerator Group of the European Physical Society)
	EPS-AG fosters the most efficient and highest quality dissemination of scientific information in the field of accelerator in Europe and world-wide, particularly through the

	scientific organization of the International Particle Accelerator Conferences (IPAC). Within EPS-AG, the candidate is member of a team, charged to organize the publication of IPAC proceedings on a refereed journal (to the benefit of the whole community of particularly young researchers).
•Date	Since 2012
• Role	Member of the MAC of INFN
	The committee is charged to assess: innovation developments in the field of accelerators done by INFN labs and units; follow-up in the realization of special projects, with funds to INFN by the Italian Minister for Research; extraordinary maintenance and upgrades, in the field of accelerators, requested by the national laboratories of INFN.
•Date	2010-2014
• Role	Member of the TAC of ESS
	Together with dr. Caterina Biscari (INFN-LNF, now director at ALBA-CELLS, Barcelona), he represents INFN in the international Technical Advisory Committee of the European Spallation Source, in construction in Lund (S). Within the committee, he was charged – in particular – of evaluating the accelerator front-end (source and normal conducting injector) and the development on the superconducting spoke resonators.
•Date	2008-2013
• Role	Member of FAIR-MAC
	FAIR-MAC is the Machine Advisory Committee nominated by the International Steering Committee of FAIR, the Facility for Antiproton and Ion Research which is being built in Darmstadt (D). It has the role of reviewing the accelerator TDR and following up the project realization. The Committee was chaired by Dr. Lyn Evans, project leader of the Large Hadron Collider at CERN.
•Date	2006-2012
• Role	Member, nominated by the President of INFN, of the Scientific-Technical Committee of RFX Consortium
• Main Responsibilities	Evaluation of the working programme of the RFX Consortium, within the European collaboration EFDA in the framework of Controlled Thermonuclear Fusion and the ITER experimental reactor.
• Main related activities	INFN participates in the RFX Consortium through the joint project and construction of the Neutral Beam Injector (NBI) into the ITER plasma. The Consortium has the leading role in Europe for the construction of the NBI: INFN contributes with studies on beam extraction and acceleration, cryogenic pumping and high voltage insulation in high vacuum. The Committee meets twice-yearly to assess both the completed activity of the previous year and the planned activity of the following one.
•Date	2005-2010
• Role	Member of the Scientific Advisory Board of PAC (Particle Accelerator Conference) and EPAC (European Particle Accelerator Conference)
• Main Responsibilities	Proposal and assessment of the overall proposed invited and contributed papers to the Particle Accelerator Conference. The candidate belongs to the sub-committee “Radiofrequency”.
•Date	Since 2007

• Role	Member of the Review Committee of Eurisol-DS
• Main Responsibilities	Reviewing activity of all papers published in the framework of the European Project “Eurisol-DS”. The candidate assesses papers on the driver accelerator and the RNB-accelerator.

•Date	1999 - 2007
• Funzione	Monitoring Expert of the International Science and Technology Center (ISTC) (Encl.17)
• Main Responsibilities and activities	The ISTC organizes and funds the activities of conversion of the military research of the former USSR. The candidate has executed, on behalf of the European Commission, the monitoring activity of two projects executed by the Khlopin Radium Institute in St. Petersburg (Ru) in collaboration with Institutions in Germany, Sweden, Italy in the field of generation and acceleration of ionized heavy clusters. The monitoring activity consisted in evaluating the fulfillment of the planned scientific and technological goals and its management through yearly workshops promoted by the candidate and in facilitating the applications of their findings in the fields of nanotechnologies and molecular biology.

•Date	In 2001 and in 2003
• Role	Member of the Committee of Independent Experts for the Monitoring of the activities of the European Commission in the field of Controlled Thermonuclear Fusion (Encl.18)
• Main Responsibilities and activities	Twice-yearly evaluation of the European activity, in a group of four experts from various EU states, through dedicated workshops and the editing of an evaluation report for the European Commission.

•Date	2003-2008
• Role	Evaluator of INTAS (EU-Commission Programme for Research Programmes in collaboration between EU and Russian Federation)
• Main responsibilities and activities	The program aims at promoting and preserving the potential of scientific research in the CIS. The evaluation activity is based on the analysis of research programs sent to the candidate electronically.

•Date	2009
• Role	Chairman of the 11th International Conference “Heavy Ion Accelerator Technologies”

INTERNATIONAL COLLABORATIONS	
•Date	2016-2019
• Funzione	Scientific responsibility in the implementation of the Collaboration Protocol between INFN-LNL and the “National Institute for Radiological Science” in Chiba (J)
• Collaboration topic	Studies on Radioactive Nuclear Beam facilities, strengthening of respective assets on cyclotrons, targets, selection, RNB acceleration, through exchange of scientists and ideas.

•Date	2016-2019
• Role	Scientific responsibility in the implementation of the Collaboration Protocol between INFN-LNL and the “Institute for Theoretical and Experimental Physics”

	in Moscow (Russia)
• Collaboration topic	Heavy ion accelerators and high intensity proton accelerators, particularly in the fields of particle sources and RF accelerating structures.

•Date	2003
• Role	Visiting Scientist at BESSY II in Berlin (D)
• Collaboration topic	Scientific and technical in-depth evaluation of the development of a superconducting linac for a X-FEL project

•Date	1995-2003
• Role	Scientific responsibility in the implementation of the Collaboration Protocol between INFN and the "Institute for Chemical Research" of the Kyoto University (J)
• Collaboration topics	Exchange of researchers in the fields of linear accelerators and storage rings for heavy ions.

•Date	1998-2001
• Role	Scientific responsibility in the implementation of the Collaboration Protocol between INFN and CERN (Collaboration Contract K 505/SL)
• Collaboration topic	Chemical treatment of niobium superconducting resonators

TEACHING AND LECTURING ACTIVITY
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•Date	2012
•Role	Lecturer at the Euroschool on Exotic Beams, Athens (G).

•Period	Academic years 1997-1998, 1998-1999 e 1999-2000
•Role	Research Professor at the Physics Course of the Faculty of Science (Padua University, Italy), in the course "Laboratory of Physics Technologies" of the last year

•Date	2000
•Role	Lecturer at the CERN Accelerator School on RF Engineering (Darmstadt, maggio 2000), on "Superconducting Cavities"

•Date	1995-2010
•Role	Supervisor of several master theses in Physics, Electronic Engineering, Mechanical Engineering, associated to work done on INFN or international projects (e.g. Eurisol DS)