BARBARA **MARTELLI**

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She graduated in Computer Science at the University of Bologna full marks cum laude in 2002. She is currently working as a Technologist (Tecnologo) at INFN-CNAF. She is member of the External Projects and Technology Transfer group and she coordinates the ICT unit of INFN-TTLab (the INFN industrial research lab in the Emilia Romagna Region) of which she contributed to the creation. She is the INFN-CNAF contact person for Third Mission activities (Techology Transfer, Social Engagement and Innovation).
In the past, she worked and performed research activities within the INFN WLCG-Tier1 datacenter, in the fields of distributed data management and distributed computing for the CERN LHC experiments. She was responsible for the INFN WLCG-Tier1 database management and operations and she was the INFN contact person within the European LCG 3D project (Distributed Deployment of Databases). Since 2009 Barbara was responsible for the CNAF section of the INFN Information System and was one of the main contributors on the feasibility study, proof of concept and execution of the migration of the Information system from a legacy HW/SW platform to a commodity, low-expense open source platform. Carrying out this task she gained experience in the field of business processes, application analytics and enterprise data management. Since 2012 she contributed to the study, definition, design and deployment of the distributed data management infrastructure for the Extreme Energy Events (EEE) experiment. She participated to Open City Platform, a project founded by the Italian Ministry of University and Research with the main goal of developing an open source Cloud platform for the Italian public administrations. In OCP Dr. Martelli was responsible for the Big Data infrastructure definition and deployment.

Curriculum Vitae of Francesco Noferini

PERSONAL INFORMATION

Noferini, Francesco:
ORCID: orcid.org/0000-0002-6704-0256
Date of Birth: 19th September 1978
Nationality: Italian
URL for web site: www.bo.infn.it/~noferini

- EDUCATION

2012 National Academic Qualification, eligibility as Associate Professor
Sector: 02/A1 - EXPERIMENTAL PHYSICS OF FUNDAMENTAL INTERACTIONS
2007 PhD
Physics Department, Bologna University, Italy
Supervisor: prof. Luisa Cifarelli
2003 Master
Physics Department, Bologna University, Italy

- CURRENT POSITION

2017 Staff researcher, INFN (Bologna)
INFN sez. Bologna at Physics Department of Bologna University

- PREVIOUS POSITION

2015-2016 INFN Researcher at CNAF (INFN computing centre), Bologna (Italy)
2010-2015 E. Fermi centre research Grant, Rome (Italy)
2008-2010 INFN research Grant at CNAF (INFN computing centre), Bologna (Italy)
2007-2008 E. Fermi centre research Grant, Rome (Italy)

- FELLOWSHIP AND AWARDS

2007-2017 Scientific association with CERN (Geneve)
2014: "F. Rimondi" award (poster session) at the 44th International Symposium on Multiparticle Dynamics.
2007: G. Puppi - WFS Award for New Talents 2007 - For his original study of two particle correlations from RHIC to LHC.
2006: International School of Subnuclear Physics 2006, 44th Course - Talk awarded as "Valuable Work in Experimental Physics".

- ISTITUTIONAL RESPONSIBILITY

2014-2016: Co-convener particle identification group in ALICE (PAG-PP-PID)
2014-2017: Responsible for EEE computing at CNAF, Bologna
2008-2017: Responsible for ALICE resources at the Italian Tier-1

- COMMISSIONS OF TRUST

2013-2017: Reviewer for European Physical Journal

- SELECTED INVITED SEMINARS

2015: CERN seminar on Precision measurement of the mass difference between light nuclei and anti-nuclei with ALICE at the LHC
2010: Particle production at LHC with the ALICE experiment, Gangnung University, South Corea.
2010: The Italian Tier1: CNAF status report and experience within the ALICE experiment, KISTI Tier-2, Daejon, South Corea

- SELECTED CONFERENCE PRESENTATION

2015: The ALICE PID performance in Run-1 and perspectives in view of Run-2, 3rd Course LHCp: Large Hadron Collider Physics, St. Petersburg
2015: The computing and data infrastructure to interconnect EEE stations, 13th Pisa Meeting on advanced detectors: Frontier detectors for frontier physics, La Biodola, Italy
2014: Elliptic flow of identified particles measured by ALICE at the LHC, 44th Internetional Symposium on Multiparticle Dynamics, Bologna
2012: Anisotropic flow of identified particles in Pb-Pb collisions at 2.76 TeV measured with ALICE at the LHC, Quark Matter 2012, Washington
2011: Anisotropic flow of identified particles measured with the ALICE detector in the first year of heavy-ion, Strangeness in Quark Matter, Cracow
2010: Momentum spectra of identified particles in pp collisions with the ALICE detector, Rencontres de Moriond QCD and High Energy Interactions
2009: A Comparison of Data-Access Platforms for BaBar and ALICE analysis Computing Model at the Italian Tier1, CHEP 2009, Praga

- TEACHING ACTIVITY

2016-2017 lecturer on contract – “Data Acquisition Laboratory”, Bologna University, Italy

- BIBLIOGRAPHY (Web Of Knowledge)

188 Publications

F. Noferini activity

I have been working in high-energy physics since 2004 when I joined the INFN TOF ALICE group in Bologna during my PhD.

***ALICE* ACTIVITY**

Physics

Before of the start of the LHC Hera (in 2009) I worked in the construction of the ALICE Time of Flight (TOF) and in the software development for the reconstruction of the TOF data. In particular, I shared the responsibility, since 2010, in the management/development of the TOF software data structure, data reconstruction and simulation. In November 2009 I started to work on the identification of pions, kaons and proton via the time-of-flight measurement. I obtained the **first results of the ALICE collaboration for this observable that I presented in Moriond at the beginning of 2010** (Momentum spectra of identified particles in pp collisions with the ALICE detector, Rencontres de Moriond QCD and High Energy Interactions).

In order to reach the desired performance (TOF resolution of 80 ps) I worked on a procedure to provide the **initial start time of the collision based on a combinatorial algorithm on all the track reached the TOF** (the TOF is then able to provide also the start by itself, not only the time arrival).

I continued to be strongly involved in the Particle Identification (PID) in ALICE to improve the PID capability using statistical Bayesian approaches becoming one of the most expert in ALICE in the PID: I'm co-convener of the Particle Identification group (PWG-PP-PID) from 2014 and I presented the first results on Bayesian PID at LHCP15 in St. Petersburg.

In 2010 with the first PbPb collisions provided by LHC, I started an **activity in the correlation analysis group to perform measurements needed to characterize the matter produced in such collisions in terms of collective effects**. My main role in the group was in the characterization of collective phenomena using identified particles. My work on the elliptic flow of identified particles in PbPb collisions was also awarded as "F. Rimondi" award (poster session) at the 44th International Symposium on Multiparticle Dynamics.

Computing

In 2008 I became **responsible for ALICE activities at the Italian INFN Tier-1** (CNAF). In particular, I followed the management of the ALICE services for computing and storage and their interaction with the framework used in ALICE (AliEn). The amount of resources managed corresponds, in 2017, to thousands of cores dedicated to ALICE, several PBs for disk and data preservation tapes and a connection with an access rate to data up to 6 GB/s [1,2].

[1] A Comparison of Data-Access Platforms for BaBar and ALICE analysis Computing Model at the Italian Tier1, CHEP 2009, J. Phys. Conf. Ser. 219 072003 (2010).
[2] Xrootd data access for LHC experiments at the INFN-CNAF Tier-1, J.Phys.Conf.Ser. 513 (2014) 042023.

My roles in ALICE favoured the achievement of a big experience in using big data both from the point of view of data analysis and data management at a computing centre.

***EEE PROJECT* ACTIVITY**

In 2014 I joined also the EEE Project collaboration during its upgrade phase to a coordinate acquisition system at CNAF.

Physics and Outreach

I'm involved in the physics program of EEE Project **searching for coincidences in cluster** of telescopes at a distances < 2 Km accessible in several EEE sites with the role of coordinator of the analysis and the paper preparation. Coincidences of secondary cosmic rays at large distances allows to select primary rays of very high energies (> 10^16 eV) [3].

Computing

I'm also **coordinating the EEE data management at CNAF in Bologna** where the data of all the 50 telescopes are collected. Starting from 2014 the data are collected at CNAF and reconstructed to allow the monitor of the data quality in quasi-real time. The architecture of the data management system [4] was developed to account for the specific requests of the experiment. I worked in the optimization of the reconstruction software and in particular in managing the information of multi-tracks events. The new software I developed is in production from the end of the Run-2 (June 2016). The new software allows to perform also the measurement of the efficiency of the chambers without the need of external detectors. This is realized using the feature of the trigger card to provide a signal excluding one of the chambers from the trigger. This technique allowed at the end of Run-2 to **perform *remotely* an efficiency scan on all the telescopes** even if the detectors are placed in the schools.

[3] Towards the installation and use of an extended array for cosmic ray detection: The EEE Project", Nucl. Phys. Proc. Suppl. (2009) 190:38.
[4] The computing and data infrastructure to interconnect EEE stations", F. Noferini, Nucl. Inst. & Meth. A (2015), doi:10.1016/j.nima.2015.10.069.

The experience I achieved in the EEE collaboration in the last two years convinced me that the idea behind the LDCORE proposal is sustainable and innovative.

OUTREACH AND TEACHING ACTIVITY

Since the telescopes of the EEE Project are hosted in Italian high schools, **I'm also involved in an important outreach activity**. I periodically present to the students the physics of cosmic rays through the analysis of data collected by their telescope (muon decays, rate vs pressure, …). Moreover, also joined in the past years speed date activities at the European night of researcher initiatives.

As INFN researcher, I don't have any teaching obligation, however I am **engaged in teaching activity in Bologna University** since the end of my PhD giving seminaries and lectures addressed to the student for Modern Physics (first level degree) and Subnuclear Physics (second level degree) courses. I followed students as thesis advisor (three first level degree theses and four second level degree theses) and I am in several examination boards.

In 2016-2017, I am holder of a teaching module: "Laboratorio di acquisizione ed elaborazione dati - 3 modulo 3" (data acquisition laboratory).

Davide Salomoni

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Davide Salomoni is Director of Technology at the Italian National Institute for Nuclear Physics (INFN). He has 27 years of international experience in private and public environments related to distributed computing and communication technologies. He currently leads the Software Development and Distributed Systems department at CNAF, the INFN National Center dedicated to research and development on IT technologies, located in Bologna, Italy.

He was Project Coordinator of INDIGO-DataCloud, a 26-partners project funded with 11M€ by the EC Horizon2020 framework program targeted to multi-disciplinary scientific communities and to resource providers, running from 2015 to 2017. INDIGO-DataCloud developed innovative open source computing and storage solutions, deployable on heterogeneous, hybrid distributed infrastructures. He was also part of the core team that prepared the EOSC-hub proposal, a project running from 1/1/2018 to 31/12/2020 led by EGI, EUDAT and INDIGO-DataCloud, involving more than 100 international partners, that will provide an integration and management system of the European Open Science Cloud; he is also a key player of two other European INDIGO-DataCloud follow-on projects, eXtreme-DataCloud and DEEP-Hybrid DataCloud.
Davide is member of the EGI Executive Board, member of the Scientific Technical Committee of the Italian distributed ReCaS infrastructure, leads or participates to several other national and international projects and advisory groups on distributed architectures, is member of the INFN Scientific Computing Committee, head of the INFN Cloud Computing Working Group and is engaged with activities and collaborations with Universities, Public Administrations, research institutions and commercial companies through seminars, courses, lectures and joint programs.

From 2005 to 2011 he was in charge of designing, implementing, starting up and managing the large computing farm installed at the INFN National Computing Center located at CNAF, Bologna, which currently counts about 18,000 CPU cores, 25 Petabytes of disk storage and 50 Petabytes of tape storage.

From 2003 to 2005 he had the role of senior scientist at NIKHEF (Nationaal instituut voor subatomaire fysica, the Dutch institute for research in Astro-Particle Physics) in Amsterdam, The Netherlands. He focused there on distributed computing and in particular on Grid computing technologies, contributing to the management and development of the Dutch national computing center at NIKHEF/SARA.

From 2001 to 2003 he was Technical Manager of the Dutch Internet Team at COLT Telecom in Amsterdam, The Netherlands. He contributed there to the design and operational readiness of the COLT NL data center and to the definition and implementation of several commercial products involving data and IT managed services. He was also a member of the architectural group of the COLT Europe Internet Division.

From 1999 to 2001 he worked at the Stanford Linear Accelerator Center (SLAC) in Menlo Park, USA. He chaired the SLAC networking group, focusing in particular on the optimization of the local networks, on network data transfer for physics experiments and on the evolution of wide-area high-speed data transmission technologies.

From 1991 to 1998, after his MD in Physics from the University of Bologna (1990), he worked at INFN CNAF on networking technologies, designing and developing distributed monitoring systems for the then-current DECnet, IP and X.25 networks used by INFN and by other Italian scientific communities. He represented INFN in several national and international working groups linked to the design and development of network communication protocols and distributed infrastructures. He was one of the designers and implementers of the Italian academic and research network (GARR), and was the architect and first manager of its Network Operations Center.

Mother tongue(s) Italian

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2
	Cambridge Certificate of Advanced English				
French	A2	B1	A2	A2	A2
Spanish	A2	B1	A2	A2	A2
Dutch	A1	A1	A1	A1	A1

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
Common European Framework of Reference for Languages

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Selected publications

- Salomoni D. et al. (2017), **INDIGO-DataCloud:A data and computing platform to facilitate seamless access to e-infrastructures**, https://arxiv.org/abs/1711.01981

- Antonacci M, Brigandì A, Caballer M, Donvito G, Moltó G, Salomoni D (2017), **Piattaforme per l'analisi di Big Data istanziate on-demand tramite la PaaS di INDIGO-DataCloud**, GARR Conference 2017 Selected Paper, DOI: 10.13140/RG.2.2.34007.98726

- Salomoni D et al. (2017), **Geographically distributed Batch System as a Service: the INDIGO-DataCloud approach exploiting HTCondor**, J.Phys.Conf.Ser. 898 (2017) no.5, 052033, DOI: 10.1088/1742-6596/898/5/052033

- Aiftimiei C, Fattibene E, Gargana R, Panella M, Salomoni D (2017), **Abstracting application deployment on Cloud infrastructures**, J.Phys.Conf.Ser. 898 (2017) no.8, 082053, DOI: 10.1088/1742-6596/898/8/082053

- Aiftimiei C, Costantini A, Bucchi R, Italiano A, Michelotto D, Panella M, Pergolesi M, Saletta M, Traldi S, Vistoli C, Zizzi G, Salomoni D (2017), **Cloud Environment Automation: from infrastructure deployment to application monitoring**, J.Phys.Conf.Ser. 898 (2017) no.8, 082016, DOI: 10.1088/1742-6596/898/8/082016

- Lopez Garcia, Zangrando L, Sgaravatto M, Llorens V, Vallero S, Zaccolo V, Bagnasco S, Taneja S, Dal Pra S, Salomoni D, Donvito G (2017), **Improved Cloud resource allocation: how INDIGO-DataCloud is overcoming the current limitations in Cloud schedulers**, https://arxiv.org/abs/1707.06403

- Fiore S, Płóciennik M, Doutriaux C, Palazzo C, Boutte J, Żok T, Elia D, Owsiak M, D'Anca A, Shaheen Z, Bruno R, Fargetta M, Caballer M, Moltó G, Blanquer I, Barbera R, David M, Donvito G, Williams D N, Anantharaj V, Salomoni D, Aloisio G, **Distributed and cloud-based multi-model analytics experiments on large volumes of climate change data in the earth system grid federation eco-system**, Proceedings - 2016 IEEE International Conference on Big Data, Big Data 2016, DOI: 10.1109/BigData.2016.7840941

- Salomoni D. et al. (2016), **INDIGO-Datacloud: foundations and architectural description of a Platform as a Service oriented to scientific computing**, https://arxiv.org/abs/1603.09536

- SALOMONI D (2016), **Scientific Clouds, in Grid and Cloud Computing: Concepts and Practical Applications**, Proceedings of the International School of Physics "Enrico Fermi", IOS Press, ISBN 978-1-61499-642-2, pp. 31-69.

- SALOMONI D et al (2015), **Accessing Grid and Cloud Services Through a Scientific Web Portal**, JOURNAL OF GRID COMPUTING, Volume: 13, Issue: 2, Pages: 159-175, ISSN: 1570-7873, doi: 10.1007/s10723-014-9310-y.

- Ronchieri, E; Canaparo, M; SALOMONI, D (2014), **A Software Quality Model by Using Discriminant Analysis Predictive Technique**, Journal of Integrated Design & Process Science, ISSN 1092-0617, pp. 25-59, 2014.

- Donvito G, Salomoni D, Italiano A, **Testing SLURM open source batch system for a Tierl/Tier2 HEP computing facility**, Journal of Physics: Conference Series, 2014, DOI: 10.1088/1742-6596/513/3/032027

- SALOMONI D et al, **A Cloud-based solution for Public Administrations – The experience of the Marche region**. In proceedings of: The 2014 International Conference on Collaboration Technologies and Systems (CTS 2014), Minneapolis, USA, May 2014.

- Bilei G M, Caberletti M, Fanò L, Fattibene E, Manzali E, Morandin M, Riahi H, SALOMONI D, Spiga D, Storchi L, Valentini A, Veronesi P, Venturi V (2014). **Designing and prototyping a Cloud ecosystem for the Italian Public Administration**. In proceedings of: International Symposium on Grids and Clouds (ISGC 2014), Taipei, Taiwan, March 2014. PoS (ISGC2014) 009.

- Ronchieri E, Cesini D, D'Agostino D, Ciaschini V, Dalla Torre G, Cozzi P, SALOMONI D, Clematis A, Milanesi L, Merelli I (2014). **The WNoDeS Cloud virtualization framework: a macromolecular surface analysis application case study**. In proceedings of: 22nd Euromicro International Conference on Parallel, Distributed and network-based Processing (PDP), Turin, Italy, February 2014. ISSN 1066-6192, DOI 10.1109/PDP.2014.54.

- SALOMONI D, Giacomini F, Maron G, Schifano F S, Pivanti M, Tripiccione R, Manzali M, Caberletti M (2013). **Computing on Knights and Kepler Architectures**. In proceedings of: Computing in High Energy and Nuclear Physics (CHEP 2013), Journal of Physics Conference Series.

- Ciaschini V, Canaparo M, Ronchieri E, SALOMONI D (2013). **Evaluating Predictive Models of Software Quality**. In proceedings of: Computing in High Energy and Nuclear Physics (CHEP 2013), Journal of Physics Conference Series.

- Fanò Ilic L, Fattibene E, Manzali E, Riahi H, SALOMONI D, Valentini A, Veronesi P, Venturi V (2013). **Realizzazione di un'infrastruttura Cloud pilota basata su OpenStack**. In: Workshop GARR Calcolo e Storage Distribuito (CSD), Selected papers 06/2013: 1:76-82.

- Andreotti D, Caberletti M, Ciaschini V, Dalla Torre G, Ronchieri E, SALOMONI D, Italiano A (2013). **Distributed open cloud computing, storage and network with WNoDeS: Esperienza ed Evoluzione**. In: Workshop GARR Calcolo e Storage Distribuito (CSD), Selected papers 06/2013; 1:63-68.

- Elisabetta Ronchieri, Marco Verlato, Davide SALOMONI, Gianni Dalla Torre, Alessandro Italiano, Vincenzo Ciaschini, Daniele Andreotti, Stefano Dal Pra, Wouter Geert Touw, Gert Vriend, Geerten W. Vuister (3/2013). **Accessing Scientific Applications through the WNoDeS Cloud Virtualization Framework**. In proceedings of: The International Symposium on Grids and Clouds (ISGC), PoS, At Academia Sinica, Taipei, Taiwan.

- SALOMONI D, Caberletti M. **A Dynamic Virtual Networks Solution for Cloud Computing** (2012). In SCC '12 Proceedings of the 2012 SC Companion: High Performance Computing, Networking Storage and Analysis, IEEE Computer Society Washington, DC, USA, pp. 526-534.

- Chierici A, SALOMONI D (2012). **Increasing performance in KVM virtualization within a Tier-1 environment**. Journal of Physics Conference Series 12/2012; 396(3):2024-. DOI:10.1088/1742-6596/396/3/032024.

- Elisabetta Ronchieri, Giacinto Donvito, Paolo Veronesi, Davide SALOMONI, Alessandro Italiano, Gianni Dalla Torre, Daniele Andreotti, Alessandro Paolini (2012). **Resource Provisioning through Cloud and Grid Interfaces by means of the Standard CREAM CE and the WNoDeS Cloud Solution**. In proceedings of: EGI Community Forum 2012 / EMI Second Technical Conference, PoS, At Munich, Germany, DOI: 10.22323/1.162.0124.

- Grandi C, Italiano A, SALOMONI D., Calabrese Melcarne A K (2011). **Virtual pools for interactive analysis and software development through an integrated Cloud environment**. Journal of Physics Conference Series 12/2011; 331(7):072017.

- Bencivenni M, Michelotto D, Cecchi M, SALOMONI D., Veronesi P, Ceccanti A, Gaido L, Misurelli G, Brunetti R, Ciaschini V, Andreotti D, Giacomini F (2011). **A portal for an easy access to the IGI grid infrastructure**, Poster at the European Grid Infrastructure Technical Forum 2011, Lyon 19-23 September 2011

- SALOMONI D., Calabrese Melcarne A K, Chierici A, Dalla Torre G, Italiano A (2011). **Performance improvements in a large scale virtualization system**. In: PoS(ISGC 2011 & OGF 31)049. Taipei, Taiwan, 21-25 March, 2011

- SALOMONI D., Andreotti D, Cestari L, Potena G, Solagna P (2011). **A Web-based portal to access and manage WNoDeS Virtualized Cloud resources**. In: PoS(ISGC 2011 & OGF 31)054. Taipei, Taiwan, 21-25 March, 2011

- SALOMONI D., Italiano A, Ronchieri E (2011). **WNoDeS, a tool for integrated Grid and Cloud access and computing farm virtualization**. JOURNAL OF PHYSICS. CONFERENCE SERIES, ISSN: 1742-6596

- SALOMONI D., Chierici A, Italiano A, Ronchieri E, Solagna P (2011). **WNoDeS: un servizio per la gestione di infrastrutture condivise Cloud e Grid**. In: Conferenza GARR_10 - Selected papers. Torino, 2010

- Ciaschini V, SALOMONI D. (2011). **An Authentication Gateway for Integrated Grid and Cloud Access**. Journal of Physics Conference Series 12/2011; 331(6):062021.

- Di Meglio A, Riedel M, Memon S, Loomis C, SALOMONI D. (2011). **Grids and Clouds Integration and Interoperability: an overview**. In: PoS(ISGC 2011 & OGF 31)112. Taipei, Taiwan, 21-25 March, 2011

- Doria A, Barchiesi A, Campana S, Carlino G, Ciocca C, De Salvo A, Italiano A, Musto E, Perini L, Pistolese M, Rinaldi L, SALOMONI D., Vaccarossa L, Vilucchi E (2010). **Deployment of job priority mechanisms in the Italian Cloud of the ATLAS experiment**. JOURNAL OF PHYSICS. CONFERENCE SERIES, ISSN: 1742-6596

- Fella A, Furano F, Li Gioi L, Noferini F, Steinke M, Andreotti D, Cavalli A, Chierici A, dell'Agnello L, Gregori D, Italiano A, Luppi E, Martelli B, Prosperini A, Ricci P, Ronchieri E, SALOMONI D., Sapunenko V, Vitlacil D (2010). **A comparison of data-access platforms for BaBar and ALICE analysis computing model at the Italian Tier1**. JOURNAL OF PHYSICS. CONFERENCE SERIES, ISSN: 1742-6596

- SALOMONI D. (2010). **Gridification of a Cloud infrastructure through virtualization technologies and related security challenges**, Presented at the Open Grid Forum (OGF) 28, Munich, March 15-18, 2010

- SALOMONI D et al. (2009). **Activities and performance optimization of the Italian computing centers supporting the ATLAS experiment**. Nuclear Science Symposium Conference Record (NSS/MIC), 2009 IEEE; 12/2009.

- SALOMONI D., et al. (2009). **INFN-CNAF activity in the TIER-1 and GRID for LHC experiments**. In: Proc. of the 2009 IEEE International Symposium on Parallel&Distributed Processing, ISBN/ISSN: 978-1-4244-3751-1, doi: 10.1109/IPDPS.2009.5160968

- Chierici A, Veraldi R, SALOMONI D. (2009). **Measuring performances of linux hypervisor**. IL NUOVO CIMENTO C, vol. 032; p. 213-225, ISSN: 2037-4909, doi: 10.1393/ncc/i2009-10391-x

- Barbera R, Ceccanti A, Ciaschini V, Di Stefano A, Ferraro A, Forti A, Ghiselli A, Italiano A, Morana G, SALOMONI D, Scuderi G L, Venturi V, Zito D (2008). **Service Level Agreement in gLite**. In proceeding of: Italian E-Science Conference IES 2008.

- CESINI D, CIASCHINI V, DONGIOVANNI D, FERRARO A, FORTI A, GHISELLI A, ITALIANO A, SALOMONI D. (2008). **Enabling a priority-based fair share in the EGEE infrastructure**. JOURNAL OF PHYSICS. CONFERENCE SERIES, vol. 119, ISSN: 1742-6596

- BENCIVENNI M, BONIFAZI F, CARBONE A, CHIERICI A, D'APICE A, DE GIROLAMO D, DELL'AGNELLO L, DONATELLI M, FELLA A, GHISELLI A, ITALIANO A, LO RE G, MARTELLI B, MAZZUCATO M, ONOFRI M, RICCI P.P, ROSSO F, SALOMONI D., SAPUNENKO V, VERALDI R, VISTOLI C, VITLACIL D, ZANI S (2008). **A comparison of data-access platforms for the computing of Large Hadron Collider experiments**. IEEE TRANSACTIONS ON NUCLEAR SCIENCE, vol. 55; p. 1621-1630, ISSN: 0018-9499

- Italiano A, SALOMONI D., Rosso F, Chierici A (2007). **Farm Logbook, a tool to keep/trace all operations on a big computing farm**, Poster at the Computing in High-Energy Physics conference (CHEP) 2007, Victoria, Canada, 2-9/11/2007

- Ciaschini V, Ghiselli A, Ceccanti A, Venturi V, Ferraro A, Andreozzi S, SALOMONI D., Italiano A (2007). **A VO-oriented AuthN/AuthZ approach**, Presented at the EGEE User Forum, Manchester, UK, 9-11 May, 2007

- DELL'AGNELLO L, BENCIVENNI M, CARBONE A, CHIERICI A, D'APICE A, DE GIROLAMO D, DONATELLI M, FELLA A, FORTI A, GHISELLI A, ITALIANO A, LO RE G, MAGNONI L, MARTELLI B, MAZZUCATO M, RICCI P.P, ROSSO F, SALOMONI D., SAPUNENKO V, VERALDI R, VITLACIL D, ZANI S, ZAPPI R (2007). **Storage management solutions and performance tests at the INFN Tier-1**. JOURNAL OF PHYSICS. CONFERENCE SERIES, vol. 119, ISSN: 1742-6596

- GARCIA A.L, MARIOTTI M, SALOMONI D., SERVOLI L (2007). **A high availability solution for GRID services**. In: ACAT (Advanced Computing and Analysis Techniques in Physics). Amsterdam

- Vistoli M C, SALOMONI D., et al. (2006). **Operations structure for the management, control and support of the INFN-GRID/Grid.It production infrastructure**. In: Proc. of Conference on Computing in High Energy and Nuclear Physics (CHEP 2006), ISBN/ISSN: 0230-63017-0

- Aiftimiei C, Andreotti D, Andreozzi S, Bagnasco S, Belforte S, Bonacorsi D, Caltroni A, Campana S, Capiluppi P, Cavalli A, Cesini D, Ciaschini V, Corvo M, Dellipaoli F, De Salvo A, Donno F, Donvito G, Fanfani A, Fantinel S,

Ferrari T, Ferraro A, Ferro E, Gaido L, Galli D, Ghiselli A, Giacomini F, Grandi C, Guarise A, Lacaprara S, Lucchesi D, Luminari L, Luppi E, Maggi G, Marconi U, Masera M, Masoni A, Mazzucato M, Molinari E, Perini L, Prelz F, Rebatto D, Resconi S, Ronchieri E, Rubini G, SALOMONI D., Sciabà A, Selmi M, Sgaravatto M, Tomassetti L, Vagnoni V, Verlato M, Veronesi P, Vistoli M C (2006). **Prototyping production and analysis frameworks for LHC experiments based on LCG/EGEE/INFN-Grid middleware**. In: Proc. of Conference on Computing in High Energy and Nuclear Physics (CHEP 2006), ISBN/ISSN: 0230-63017-0

- ANDREOZZI S, CECCHI M, CIASCHINI V, FERRARO A, GHISELLI A, GIACOMINI F, ITALIANO A, RUBINI G.L, SALOMONI D. (2006). **An Approach for Intra-VO Computing Differentiated Services in Grid Systems**. In: Proceedings of the Cracow Grid Workshop 2006 (CGW2006). Cracow, Poland, 15-18/10/2006, ISBN/ISSN: 83-915141-7-X

- GUY L, COLLADOS D, REALE M, TRAYLEN S, GROEP D, BOSIO D, THEILE M, SALOMONI D., TEMPLON J (2004). **Distributed testing infrastructure and processes for the EGEE grid middleware**. In: CHEP (Computing in high energy and nuclear physics). Interlaken

- BUNN J.J, COTTRELL L, LUITZ S, MOUNT R, NEWMAN H.B, PATTON J, SALOMONI D. (2001). **Evaluation of WAN and LAN links in the gigabit / sec range for large scale data transfers**. In: CHEP (Computing in high energy and nuclear physics). Beijing

- MATTHEWS W, COTTRELL L, SALOMONI D. (2001). **Passive and active monitoring on a high performance research network**. In: PAM (Passive and Active Monitoring), Amsterdam, https://www.researchgate.net/publication/2360938_Passive_and_Active_Monitoring_on_a_High_Performance_Research_Network

- LUITZ S, MILLSOM D, SALOMONI D., KIM J.Y, ZELE A (2000). **Transport and management of high volumes of data through bounded LAN and WAN infrastructures at SLAC**. In: CHEP (Computing in high energy and nuclear physics). Padova, http://chep2000.pd.infn.it/paper/pap-d190.pdf

- Salomoni D, **Networking in Italy** (1999), https://www.slac.stanford.edu/grp/scs/net/talk/GARR_SLAC/index.htm (also available at https://slideplayer.com/slide/8071593/)

- Bagliesi G, Barone L, Capiluppi P, Costa S, Gasparini U, Longo E, Loreti T, Rovelli T, SALOMONI D., Servoli L, Silvestris L (1996). **The CMS Computing Model, CMS TN/96-071**, May 27, 1996.

- GHISELLI A, SALOMONI D., VISTOLI C, ZANI S, ZANOTTI U (1995). **C-LAN test project: Description of infrastructure and results**, INFN Internal Note.

- GHISELLI A, SALOMONI D., VISTOLI C (1994). **RFC 1676 - INFN Requirements for an Ipng**.

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ACADEMIC EDUCATION AND TRAINING

- **Laurea in Fisica (M.Sc in Physics)**, Università di Torino: March 14, 1996.
- **Dottorato di Ricerca in Fisica (PhD in Physics)** Università di Genova: February 6, 2001.
- **Abilitazione Scientifica Nazionale di seconda fascia 02/A1 (National Scientific Qualification as Associate Professor)**, 2012.
- **International School of Science Journalism** *«The digital world: computing, networks and us»*, Erice, June 2014

POSITIONS AND CONTRACTS

- **July 1996 - April 1997**: Guest Scientist at the Fermi National Accelerator Laboratory, Batavia (USA). Member of the E835 collaboration.
- **November 1998 - March 2001**: Dottorato di ricerca in Fisica (PhD) at the University of Genova and the Stanford Linear Accelerator Centre, Menlo Park (USA). Member of the BaBar collaboration.
- **April 1, 2001 – September 30, 2002:** Assegno di Ricerca at the Experimental Physics Department of the University of Torino. Member of the NA48 collaboration at CERN.
- **October 1, 2002 – September 30, 2003:** Contract ex art. 2222 c.c. at INFN-Torino forthe DataTAG EU project. Member of the ALICE collaboration at CERN and of the GPCALMA collaboration.
- **November 17, 2003 – May 16, 2006:** Contract ex art. 2222 c.c. at INFN-Torino for the EGEE EU project. Member of the ALICE collaboration at CERN and of the MAGIC-5 Collaboration.
- **April 1, 2006 – May 30, 2008:** Technologist ex art. 23 c.c. at INFN-Torino, for the EGEE-II EU project. Member of the ALICE collaboration at CERN and of the MAGIC-5 Collaboration.
- **June 1, 2008 – February 4, 2010:** Technologist ex art. 23 c.c. at INFN-Torino. Member of the ALICE collaboration at CERN.
- **February 5, 2010 – present:** Technologist at INFN-Torino. Member of the ALICE Collaboration at CERN, in charge of the management of the INFN-Torino Computer Centre.

ROLES AND RESPONSIBILITIES

- **2003:** member of the DataTAG project Technical Board
- **2008 – June 2013:** Italian computing sites Technical Coordinator for the ALICE experiment at CERN;
- **January 2010 – present:** Coordinator of the INFN-Torino Computer Centre;
- **October 2011 - present:** Member of the INFN National Computing and Network Committee;
- **January 2012 – present:** member of the ALICE Computing Board;
- **June 2013 – present:** Deputy Computing Coordinator for ALICE-Italia;
- **November 2011 - December 2012:** ALICE collaboration delegate in INFN Special Project "INFNGRID" Executive Board.
- **2011 – present**: Technical manager (APM) of the GARR network for the Torino-Giuria PoP.
- **April 2015 – September 2017**: member of the INDIGO-DataCloud EU project.
- **2016 – present:** member of the Scientific Council and of the Management Board of the Scientific Computing Competence Centre of the University of Torino.
- **November 2017 – present**: local responsible for the DEEP-HybridDataCloud EU project.
- **September 2018 – present:** responsible for the LHCBIGDATA Maria Skłodowska Curie EU Fellowship.

SELECTED PUBLICATIONS AND TALKS

1) D. Salomoni, S. Bagnasco *et al.*, "INDIGO-DataCloud: a Platform to Facilitate Seamless Access to E-Infrastructures", *J. Grid Computing* **16**:341-408 (2018)
2) M. Aldinucci, S. Bagnasco *et al.*, "OCCAM: a flexible, multi-purpose and extendable HPC cluster", *J. Phys.: Conf. Ser.* **898** 082039 (2017)
3) S. Bagnasco, S. Vallero and V. Zaccolo, "A FairShare Scheduling Service for OpenNebula", *J. Phys.: Conf. Ser.* **898** 082037 (2017)
4) D.C. Aiftimiei, S. Bagnasco *et al.,* "Geographically distributed Batch System as a Service: the INDIGO-DataCloud approach exploiting HTCondor", *J. Phys.: Conf. Ser.* **898** 052033 (2017)
5) A. Amoroso, S. Bagnasco *et al.*, "A modular (almost) automatic set-up for elastic multi-tenants cloud (micro)infrastructures", *J. Phys.: Conf. Ser.* **898** 082031 (2017)
6) A. Lopez Garcia, S. Bagnasco *et al.*, "Improved Cloud resource allocation: how INDIGO-DataCloud is overcoming the current limitations in Cloud schedulers", *J. Phys.: Conf. Ser.* **898** 092010 (2017)
7) M. Concas, D. Berzano, S. Bagnasco, S. Lusso, M. Masera, M. Puccio, S. Vallero, "Plancton: an opportunistic distributed computing project based on Docker containers", *J. Phys.: Conf. Ser.* **898** 092049 (2017)
8) D. Elia, S. Bagnasco *et al.*, "A Dashboard for the Italian Computing in ALICE",*J. Phys.: Conf. Ser.* **898** 092054 (2017)

9) L. Alunni Solestizi, S. Bagnasco *et al.*, "Improvements of LHC data analysis techniques at Italian WLCG sites. Case-study of the transfer of this technology to other research areas" *J. Phys.: Conf. Ser.* **664** 032006 (2015)

10) S. Bagnasco, D. Berzano, A. Guarise, S. Lusso, M. Masera and S. Vallero, "Towards Monitoring-as-a-service for Scientific Computing Cloud applications using the ElasticSearch ecosystem *J. Phys.: Conf. Ser.* **664** 022040 (2015)

11) S. Bagnasco *et al.*, "Interoperating Cloud-based Virtual Farms" *J. Phys.: Conf. Ser.* **664** 022033 (2015)

12) S. Bagnasco, D. Berzano, S. Lusso, M. Masera and S. Vallero, "Managing competing elastic Grid and Cloud scientific computing applications using OpenNebula", *J. Phys.: Conf. Ser.* **644** 022004 (2015)

13) S. Bagnasco, D. Berzano, A. Guarise, S. Lusso, M. Masera and S. Vallero, "Monitoring of IaaS and scientific applications on the Cloud using the Elasticsearch ecosystem", *J. Phys.: Conf. Ser.* **608** 012016 (2015)

14) S. Bagnasco, D. Berzano, R. Brunetti, S. Lusso, S. Vallero, "Integrating multiple computing needs via a Private Cloud infrastructure", *J. Phys.: Conf. Ser.* **513** 032100 (2014)

15) D. Berzano, S. Bagnasco, R. Brunetti, S. Lusso, "PROOF on the Cloud for ALICE using PoD and OpenNebula", *J. Phys.: Conf. Ser.* **368** 012019, 2012

16) S. Bagnasco, L. Betev et al., "The ALICE Workload Management System: status before the real data taking", *J. Phys.: Conf. Ser.* **219** 062004, 2010

17) K. Aamodt, S. Bagnasco et al. (The ALICE Collaboration), "The ALICE experiment at the CERN LHC", *JINST* **3** S08002, 2008

18) S. Bagnasco *et al.*, "AliEn: ALICE environment on the GRID", *J. Phys.: Conf. Ser.* **119** 062012, 2008

19) D. Berzano, S. Bagnasco, S. Lusso, M. Masera, "A prototype of a dynamically expandable Virtual Analysis Facility", *Proceedings of Science* ACAT08: 050, 2008

20) R. Bellotti, S. Bagnasco *et al.*, "Distributed medical images analysis on a Grid infrastructure", *Future Generations Computer Systems* 23: 475-484, 2007

21) S. Bagnasco *et al.*, "Early Diagnosis of Alzheimer's disease using a Grid Implementation of Statistical Parametric Mapping Analysis", in *Challenges and opportunities of HealthGrids – Studies in health technology and informatics* **120**:69-81, 2006

22) S. Bagnasco *et al.*, "HEP Applications Experience with the European DataGrid Middleware and Testbed". *Journal of Grid Computing* **2**: 369-386, 2004

23) S. Bagnasco *et al.*, "AliEn - EDG interoperability in ALICE" Proceedings of 2003 Conference for Computing in High-Energy and Nuclear Physics (CHEP 03), La Jolla, California, TUCP005 (2003)

I am also author of more than 200 other papers and conference proceedings since 1996 in the context of the ALICE, BaBar and E835 collaborations.

Autorizzo il trattamento dei miei dati personali ai sensi del Dlgs. 196 del 30 giugno 2003.

Torino, September 21, 2018

Stefano Bagnasco

Daniele Cesini – CV settembre 2018

Daniele Cesini (male) is working as a Researcher in Technology (Tecnologo) at the Italian Institute for Nuclear Physics (INFN). He is currently a member of the Data Handling group at INFN-CNAF, a WLCG Tier1 datacenter. Within this group, he is responsible for the operations of the data management services exposed to users. He is the coordinator of the User Support Team of the INFN Tier1. Since 2004, he acquired experience working within national and international initiatives dealing with distributed and parallel computing. During the EGEE projects series he worked for the Italian Grid Infrastructure fulfilling managerial roles in Operations and User Support activities. For the EGI-Inspire project, he coordinated the Work Package dealing with the development of the EGI Operational tools. He focused his research in the field of efficient tasks scheduling in distributed environments for mixed High Performance/High Throughput Computing workflows. He is expert in the application porting to different computing platforms: distributed architectures, low power processors and HPC hybrid systems. He is contributing to various tasks in the ExaNeST project to build the storage system of an Exascale prototype machine. He is the project coordinator of the H2020 eXtreme-DataCloud project (XDC - http://www.extreme-datacloud.eu/) dealing with the development of data management services for extremely large datasets in heterogeneous and distributed e-infrastructures.

Curriculum Vitae
Alessandra Fanfani

Employment and Education

- Associate Professor in Experimental Physics at the University of Bologna since September 2016
- Maternity leave from November 2014 to June 2015
- Researcher (Assistant Professor) in Experimental Physics at the University of Bologna since October 2005
- Research fellow, Departement of Physics at the University of Bologna (2001-2005)
- PhD in Physics at the University of Bologna (March 2001)
- Degree/Master ("Laurea") in Physics at University of Bologna (July 1997)
- Summer student fellowship at CERN (July-August 1996)

Research activities and responsibility

- MC generator contact for the Muon group in CMS since semptember 2013 up to now (with a gap from November 2014 to June 2015 for maternity leave)
- Data analysis activities:
    - Convener of the Quarkonium Working Group (QWG) within the B-physics group in CMS (from January 2012 to January 2013)
    - Analysis on the X(3872) state at sqrt(s)=7TeV in CMS (2011-2012)
    - Analysis to measure the muon charge ratio with data collected during the cosmics run in CMS
    - Muon reconstruction performance studies both with cosmic muons (2008-2010) and with first pp collisions in CMS (from 2009 to 2011)
    - Member of the OPAL collaboration from 1997 to 2000 studying $b\bar{b}$ events collected at LEP2 in order to measure R_b and the forward-backward asymmetry of the b quark.
- Computing activities:
    - Shifter as Computing Shift person for the CMS experiment (from 2010 to 2016)
    - Development and integration of the CMS analysis tool (CRAB) in CMS, in particular the integration with the data catalogues (DBS/DLS) and the CRAB2 server deployment (from 2005 to 2010)
    - Responsible of the development of ProdAgent in CMS. ProdAgent was the tool used to produce the MonteCarlo (MC) samples for the whole CMS collaboration. (from 2006 to 2008).
    - Responsible of the development of the Data Location Service (DLS) catalogue in CMS (from 2005 to 2007).
    - Responsible of the integration and development of CMS MC production tools in the European Grid (EDG) and LHC Computing Grid (from 2002 to 2005)
    - Member (unfunded) of the Work Package NA4 (Applications) of EGEE II (INFSO-RI-031688) (2006-2008) and EGEE I (INFSO-RI-508833) (2004-2006)
    - CMS reppresentative in the Technical Working Group of Work Package 8 (HEP Applications) of the EDG project (IST-2000-25182) (from february 2003 to the end of the project , February 2004).

- Coordination and development of LCG activites within the CMS Data Challenge (January-April 2004).

- Reviewer's activities:
  - Peer Reviewer for the evaluation of the Italian research system for the period 2011-2014 (VQR 2011-2014) (2016)
  - Internal CMS reviewer as ARC member of BPH-10-015, BPH-11-016, FTR-14-014
  - Reviewer for evaluation of national projects (reviewer MIUR since 2013) and for scientific books (reviewer SEPS=European Secretariat for scientific publication since 2015)
  - Reviewer for a specific paper in the Journal of Grid Computing (2010)
  - Reviewer of the EU deliverable "Evaluation of testbed operation" (https://edms.cern.ch/document/375744) (2003) of the EDG project
- Teaching activites:
  - Teaching in General Physics courses
  - Supervisor of several Master and Bachelor Thesis in Physics
- Since 1998 CMS member of the CMS collaboration

Personal contributions to Conferences

a) "**Studies of exotic quarkonium states at CMS**": Kruger2012 Discovery Physics at the LHC, 3-7 Dec. 2012, Kruger National Park (South Africa)

b) **"Charmonium production in pp collisions at 7TeV with the CMS experiment''**:plenary session, 8th International Workshop on Heavy Quarkonium, 4-7 Oct. 2011, GSI Darmstadt (Germany)

c) **"Measurement of the charge ratio of atmospheric muons with the CMS detector":** ICATPP Conference on Cosmic Rays for Particle and Astroparticle Physics, 7-8 Oct 2010, Como (Italia)

d) Poster on **"Commissioning Distributed Analysis at the CMS Tier-2 Centers":** CHEP09 International Conference on Computing in High Energy Physics and Nuclear Physics, 21-29 March 2009, Prague (Czech Republic)

e) Poster on **"The CMS Data and Workflow Management System":** ICATPP Conference on Cosmic Rays for Particle and Astroparticle Physics, 8-12 Oct. 2007, Como (Italia)

f) **"Distributed Data Management in CMS":** CHEP06 International Conference On Computing In High Energy Physics And Nuclear Physics, 13-17 Feb. 2006, Mumbai (India)

g) **"Use of Grid Tools to Support CMS Distributed Analysis":** IEEE-NSS Conference, 16-22 Oct.2004, Roma (Italia)

h) **"Distributed computing Grid experience in CMS DataChallenge2004":** CHEP04 International Conference On Computing In High Energy Physics And Nuclear Physics, Sep 26-Oct 1 2004, Interlaken (Switzerland)

i) Invited talk on **"Status and Prospective of EU Data Grid Project"** 2nd International Workshop on High Energy Physics Data Grid (Daegu, Korea, 22-23 Aug 2003

j) **"Grid planning in CMS"** in the Work Package 8 session(HEP Applications), European DataGrid Project Conference, 12-16 May 2003, Barcellona (Spain)

k) Demo of the use of DataGrid tools in CMS shown to the EU reviewrs: 2nd Annual Review of the European DataGrid project, 4-5 Feb 2003, CERN

l) Poster **"R_b measurements at LEP2":** European School of High Energy Physics, organizzata dal CERN, 22 Agosto-4 Settembre 1999 (Slovacchia)

m) Poster **"$b\bar{b}$ events at LEP2":** V School on Non-Accelerator particle AstroPhysics, 29 Giugno-10 Luglio 1998, Trieste (Italia)

Conference proceedings and (selected) pubblications

1) **Studies of exotic quarkonium states at CMS**. *A. Fanfani*, JOURNAL OF PHYSICS. CONFERENCE SERIES. 455 (2013) 012031

2) **"Measurement of the X(3872) production cross section via decays to J/ψππ in pp collisions at √s = 7 TeV",** CMS Collaboration, DOI: 10.1007/JHEP04(2013)154, JHEP 1304 (2013) 154

3) **"J/ψ and ψ(2S) production in pp collisions at √s=7 TeV"**, CMS Collaboration, DOI: 10.1007/JHEP02(2012)011B, JHEP 1202 (2012) 011

4) **"Performance of CMS muon reconstruction in pp collision events at √s=7 TeV",** CMS Collaboration, DOI: 10.1088/1748-0221/7/10/P10002, JINST 7 (2012) P10002.

5) **Measurement of the production cross section ratio of X(3872) and Psi(2S) in decays J/Psi pi+pi- in pp collisions at sqrt(s)=7TeV**. *CMS Collaboration*, CMS-PAS-BPH-11-018, (2011) CERN CDS Server

6) **"Measurement of the charge ratio of atmospheric muons with the CMS detector** ", CMS Collaboration, DOI: 10.1016/j.physletb.2010.07.033, Phys.Lett.B692:83-104 (2010)

7) **"Performance of CMS Muon Reconstruction in Cosmic-Ray Events",** CMS Collaboration, DOI: 10.1088/1748-0221/5/03/T03022, *JINST* 5 T03022 (2010)

8) **Automation of user analysis workflow in CMS**. D. Spiga , M. Cinquilli , G. Codispoti , *A. Fanfani* , F. Fanzago , F. Farina , S. Lacaprara , E. Miccio , H. Riahi, E. Vaandering, JOURNAL OF PHYSICS. CONFERENCE SERIES. International Conference on Computing in High Energy and Nuclear Physics (CHEP'09). vol. 219, 072019, pp. 1 - 7. (2010)

9) "**Distributed Analysis in CMS**", A.Fanfani el al.(primary author), DOI: 10.1007/s10723-010-9152-1, J. Grid Computing (2010) 8:159-179 (2010)

10) "**Distributed Computing Grid Experiences in CMS**", A.Fanfani et al., DOI: 10.1109/TNS.2005.852755, IEEE Transactions on Nuclear Science, vol 52, issue 4. pp. 884-890 (2005)

11) **Use of the gLite-WMS in CMS for production and analysis**. G Codispoti, C Grandi, *A Fanfani*, D Spiga, M Cinquilli, F Farina, V Miccio, F Fanzago, A Sciaba', S Lacaprara, S Belforte, D Bonacorsi, A Sartirana, D Dongiovanni, D Cesini, S Wakefield, J Hernández, S Lemaitre, M Litmaath, Y Calas and E Roche, JOURNAL OF PHYSICS. CONFERENCE SERIES. 17th International Conference on Computing in High Energy and Nuclear Physics (CHEP'09). vol. 219, parte 6, pp. 59 – 66 (2010)

12) **Bringing the CMS distributed computing system into scalable operations**. S. Belforte , *A. Fanfani* , I. Fisk , J. Flix , J.M. Hernandez, T. Kress, J. Letts, N. Magini, V. Miccio, A. Sciaba', JOURNAL OF PHYSICS. CONFERENCE SERIES. 17th International Conference on Computing in High Energy and Nuclear Physics (CHEP'09). vol. 219, 062015, pp. 1 - 11.(2010)

13) "**CRAB: A CMS application for distributed analysis",**G. Codispoti, M. Cinquilli, A. Fanfani, F. Fanzago, F. Farina, C. Kavka, S.Lacaprara, V. Miccio, D. Spiga, E. Vaandering, DOI: 10.1109/TNS.2009.2028076, IEEE Transactions on Nuclear Science, vol. 56, issue 5, pp. 2850-2858 (2009)

14) **CMS Data and Workflow Management System**. *A. Fanfani et al.*, World Scientific, A cura di M. Barone,A. Gaddi,C. Leroy,L. Prince,P.G. Rancoita,R. Ruchti., 10th International

Conference on Advanced Technology and Particle Physics, (ICATPP) pp. 441 - 445. Singapore: World Scientific.(2008)

15) **Distributed analysis with CRAB: the client-server architecture evolution and commissioning**. G. Codispoti, M. Cinquilli, *A. Fanfani*, F.Fanzago, F. Farina,S.Lacaprara, V. Miccio, D. Spiga, E. Vaandering, POS PROCEEDINGS OF SCIENCE. XII International Workshop on Advanced Computing and Analysis Techniques in Physics Research (ACAT08) (2008)

16) **CRAB: an Application for Distributed Scientific Analysis in Grid Projects**. D. Spiga, S. Lacaprara, M.Cinquilli, G. Codispoti, M. Corvo, *A.Fanfani*, F. Fanzago, F. Farina, C. Kavka, V. Miccio, E. Vaandering, International Conference on grid computing and applications, WorldComp 2008. (vol. GCA2008, pp. 187 - 193). ISBN: 1-60132-068-X (2008)

17) **Experience in Testing the Grid Based Workload Management System of a LHC Experiment** E.Miccio, F.Fanzago, D.Spiga, M.Cinquilli, S.Lacaprara, F.Farina, *A.Fanfani*, G.Codispoti, S.Belforte, E.Vandeering, A.Sciabà, International Conference on grid computing and applications, WorldComp 2008. (vol. GCA2008, pp. 40 - 45). ISBN: 1-60132-068-X (2008)

18) **CMS Monte Carlo production in the WLCG computing grid**. *A. Fanfani et al.*, JOURNAL OF PHYSICS. CONFERENCE SERIES. International Conference on Computing in High Energy and Nuclear Physics (CHEP'07), vol. 119, 052019.(2008)

19) **CMS offline web tools**.. S. Metson, S. Belforte, B. Bockelman, K. Dziedziniewicz, R. Egeland, P. Elmer, G. Eulisse, D. Evans, *A. Fanfani*, D. Feichtinger, C. Kavka, V. Kuznetsov, F. vanLingen, D. Newbold, L. Tuura, S. Wakefield, JOURNAL OF PHYSICS. CONFERENCE SERIES. International Conference on Computing in High Energy and Nuclear Physics (CHEP'07). vol. 119, 082007 (2008)

20) **Data Location, Transfer and Bookkeeping in CMS**. *A. Fanfani et al.*, NUCLEAR PHYSICS B-PROCEEDINGS SUPPLEMENTS. Hadron Collider Physics Symposium 2007,. vol. 177-178C, pp. 279 – 280 (2007)

21) **CRAB: the CMS distributed analysis tool development and design**. D. Spiga, S. Lacaprara, W. Bacchi, M. Cinquilli, G. Codispoti, M. Corvo, A. Dorigo, *A.Fanfani*, F. Fanzago, F. Farina , O. Gutsche, C. Kavka, M. Merlo , L. Servoli, NUCLEAR PHYSICS B-PROCEEDINGS SUPPLEMENTS. Hadron Collider Physics Symposium 2007,. vol. 177-178C, pp. 267 - 268. (2007)

22) **CMS Monte Carlo production operations in a distributed computing environment**. *A. Fanfani et al.*, NUCLEAR PHYSICS B-PROCEEDINGS SUPPLEMENTS. Hadron Collider Physics Symposium 2007,. vol. 177-178, pp. 324 – 325 (2007)

23) **The CMS Monte Carlo Production System: Development and Design**. D. Evans, *A. Fanfani*, C. Kavka, F. van Lingen, G. Eulisse, W. Bacchi, G. Codispoti, D. Mason, N. De Filippis, J.M. Hernández, P. Elmer, NUCLEAR PHYSICS B-PROCEEDINGS SUPPLEMENTS. Hadron Collider Physics Symposium 2007,. vol. 177-178, pp. 285 - 286.(2007)

24) **The CMS Remote Analysis Builder (CRAB)**. D. Spiga, *A. Fanfani*, S. Lacaprara, W. Bacchi, M.Cinquilli, G. Codispoti, M. Corvo, A. Dorigo, F. Fanzago, F. Farina, M. Merlo, O. Gutsche, L. Servoli, C. Kavka, LECTURE NOTES IN COMPUTER SCIENCE. High Performance Computing -HiPC 2007,. vol. 4873, pp. 580 - 586.(2007)

25) **Status and evolution of CRAB,** F.Farina, S.Lacaprara, W. Bacchi. M. Cinquilli,G. Codispoti, M. Corvo, A. Dorigo, *A. Fanfani*, F. Fanzago, O. Gutsche, K. Kavka, M. Merlo, L.Servoli, D.

Spiga, POS PROCEEDINGS OF SCIENCE. XI International Workshop on Advanced Computing and Analysis Techniques in Physics Research (ACAT07),ISSN 1824-8039, pp. ACAT020 (2007)

26) **Distributed Data Management in CMS**. *A. Fanfani*, A cura di Sunanda Banerjee, Computing in High Energy and Nuclear Physics (CHEP'06), ISBN: 0230-63017-0. MacMillan Advanced Research Series, India, vol. II, pp. 1006 – 1009 (2006).

27) **CRAB: a tool to enable CMS Distributed Analysis**, F.Fanzago, S.Lacaprara, D.Spiga, M.Corvo, *A. Fanfani*, N. Defilippis, S.Argiro', G.Ciraolo, N.Smirnov, A cura di Sunanda Banerjee, Computing in High Energy and Nuclear Physics., ISBN: 0230-63017-0. MacMillan Advanced Research Series, India, vol. II, pp. 1110 - 1112 (2006).

28) **Prototyping production and analysis frameworks for LHC experiments based on LCG/EGEE/INFN-Grid middleware** *C. Aiftimiei et al.*, A cura di Sunanda Banerjee, Computing in High Energy and Nuclear Physics., ISBN: 0230-63017-0. MacMillan Advanced Research Series, India, vol. II, pp 998 - 1001 (2006).

29) EU deliverable "**Application Migration Report**" of the EGEE I project (http://www.cern.ch/edms/document/523422) (2005)

30) **Use of Grid Tools to Support CMS Distributed Analysis**, *A.Fanfani et al*, 2014 IEEE-NSS Conference, ISBN 0780387015 pp.2029-2032 (2004)

31) **Real-Time Analysis in CMS Data Challenge 2004**, A. Pierro, N. De Filippis, G. Donvito, L. Silvestris, *A. Fanfani*, C. Grandi, J.M. Hernandez, D. Bonacorsi, F. Fanzago, M. Corvo, , 2014 IEEE-NSS Conference, ISBN 0780387015 pp.1453-1457 (2004)

32) **Distributed Grid Experiences in CMS DC04**, *A. Fanfani et al.*, International Conference on Computing in High Energy and Nuclear Physics (CHEP'04), ISBN 9290832444 pp.1074-1077 (2004)

33) **Production management software for the CMS Data Challenge**, J. Andreeva, N. Darmenov, V. Lefebure, P. Garcia-Abia, A. Anzar, G. Graham, G. Guglielmo, N. Ratnikova, *A. Fanfani*, C. Grandi, T. Wildish, International Conference on Computing in High Energy and Nuclear Physics (CHEP'04), ISBN 9290832444 pp. 939-942 (2004)

34) **Software Agent in Data and Workflow management**, T.A. Barrass, O. Maroney, S. Metson, D. Newbold, W. Jank, P. Garcia-Abia, J. M. Hernandez, A. Afaq, M. Ernst, I. Fisk, Y. Wu, C. Charlot, I. Semeniouk, D. Bonacorsi, *A. Fanfani*, C. Grandi, N. DeFilippis, K. Rabbertz, J. Rehn, L. Tuura, T. Wildish, International Conference on Computing in High Energy and Nuclear Physics (CHEP'04), ISBN 9290832444 pp. 838-841 (2004)

35) **Role of Tier-0, Tier-1 and Tier-2 regional centers in CMS DC04**, *T.A. Barrass et al*, International Conference on Computing in High Energy and Nuclear Physics (CHEP'04), ISBN 9290832444 pp. 1065-1069 (2004)

36) **Tier-1 and Tier-2 real-time analysis experience in CMS Data Challenge 2004**, N. De Filippis, F. Fanzago, G. Donvito, A. Pierro, L. Silvestris, *A. Fanfani*, C. Grandi, J. M. Hernandez, D. Bonacorsi, M. Corvo, International Conference on Computing in High Energy and Nuclear Physics (CHEP'04), ISBN 9290832444 (2004)

37) **HEP Applications Experience with the European DataGrid Middleware and Testbed,** *S. Burke et al*, International Conference on Computing in High Energy and Nuclear Physics (CHEP'04), ISBN 9290832444 pp. 959-962 (2004)

38) **An Object-Oriented Simulation Program for CMS**, *P.Arce et al*, International Conference on Computing in High Energy and Nuclear Physics (CHEP'04), ISBN 9290832444 pp 231-234 (2004)

39) **HEP Applications and Their Experience with the Use of DataGrid Middleware**
DOI: 0.1007/s10723-004-7141-y (2004)

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Attivitá professionale

Inizia l'attivitá nell'INFN a partire dalla tesi, nel 2004, laureandosi in Ingegneria Informatica presso l'Universitá degli studi di Padova - Dipartimento di Ingegneria dell'Informazione - sviluppando i sistemi di acquisizione per l'antenna gravitazionale AURIGA ("Upgrade del sistema di acquisizione dati dell'esperimento AURIGA: migrazione su nuove piattaforme hardware e software").
Nel 2005 viene abilitato dall'Ordine degli Ingegneri della provincia di Padova alla professione di Ingegnere.
Dal 2004 al 2010 opera nel gruppo di Fisica Gravitazionale presso i Laboratori Nazionali di Legnaro dell'INFN, occupandosi prevalentemente dei sistemi di acquisizione e del software di analisi dati per gli esperimenti presenti in sede (AURIGA, DUAL R&D, E.T., RareNoise). In quest'ambito supporta gli analisti dati fornendo gli strumenti necessari all'evoluzione delle piattaforme di calcolo, in particolare introducendo dbms relazioni al servizio delle pipeline di analisi e supportando il calcolo distribuito mediante l'introduzione di hardware e strumenti software. Fornendo i tool collaborativi utili nella gestione delle diverse collaborazioni scientifiche inizia ad occuparsi di servizi.
Nel 2010 entra nella collaborazione SuperB per l'implementazione dell'infrastruttura e delle applicazioni necessari alla scrittura del Technical Design Report. In aggiunta ai servizi, in questa collaborazione ha l'opportunitá di lavorare nell'ambito del calcolo parallelo, partecipando alla progettazione e allo sviluppo del prototipo del framework per l'analisi dati offline di SuperB, attivitá che porterá ad una serie di interessanti pubblicazioni e presentazioni in ambito internazionale (IEEE, CHEP, etc.).
Dal 2012 inizia a lavorare al CNAF nel "Servizio Infrastrutture e Servizi Informatici Nazionali" dove si occupa inizialmente di alcuni strumenti come il documentale INFN e il sistema di cloud storage INFN. Progressivamente amplia l'ambito di intervento attraverso lo sviluppo di nuovi servizi e la progettazione delle infrastrutture di virtualizzazione impiegate per l'erogazione dei servizi all'interno dell'ente. In questo settore si é occupato della definizione e gestione dei sistemi di storage impiegati dai Servizi Nazionali e delle piattaforme HA oVirt e VMWare. Accanto all'attivitá di servizio trova spazio la ricerca di soluzioni innovative per l'erogazione dei servizi all'INFN, come l'utilizzo di infrastrutture di virtualizzazione cloud e l'impiego di storage ad oggetti.
Dal 2016 é responsabile del "Servizio Infrastrutture e Servizi Informatici Nazionali", dove continua l'attivitá di sviluppo delle infrastrutture per l'erogazione dei servizi e delle applicazioni stesse.

Selezione partecipazioni a conferenze

21-25/05/2012: CHEP 2012 - New York University [NY]

29/10-03/11/2012: 2012 Nuclear Science Symposium, Medical Imaging Conference & Workshop on Room-Temperature Semiconductor X-Ray and Gamma-Ray Detectors - Anaheim [CA]

04-06/02/2013: Annual concurrency forum meeting - SLAC [IL]

14-18/10/2013: CHEP 2013 - Amsterdam [NL]

15-20/11/2015: SuperComputing 2015 - Austin [TX]

13-18/11/2016: SuperComputing 2016 - Salt Lake City [UT]

Selezione Pubblicazioni

[1] Result of the IGEC-2 search for gravitational wave bursts during 2005. *Phys. Rev. D*, 76:102001, Nov 2007.

[2] A joint search for gravitational wave bursts with AURIGA and LIGO. *Classical and Quantum Gravity*, 25(9):095004, 2008.

[3] A compact, passive setup for low vibration noise measurements in the frequency band (300-2000) Hz. *Review of Scientific Instruments*, 81(3):–, 2010.

[4] IGEC2: A 17-month search for gravitational wave bursts in 2005-2007. *Phys. Rev. D*, 82:022003, Jul 2010.

[5] Exploiting new CPU architectures in the SuperB software framework. *Journal of Physics: Conference Series*, 396(2):022010, 2012.

[6] A parallel framework for the SuperB super flavor factory. In *Nuclear Science Symposium and Medical Imaging Conference (NSS/MIC), 2012 IEEE*, pages 2024–2029, Oct 2012.

[7] A vibration-free, thermally controlled setup for mechanical thermal noise measurements. *The European Physical Journal - Applied Physics*, 57, 2 2012.

[8] An integrated infrastructure in support of software development. *Journal of Physics: Conference Series*, 513(6):062018, 2014.

[9] National ICT infrastructures and services. In *CNAF Annual Report 2013*, pages 110–112. INFN, 2014.

[10] Software development made easier. In *CNAF Annual Report 2013*, pages 115–117. INFN, 2014.