

Gianluigi ARDUINI  
CERN - Beams Department

## CURRICULUM VITAE

### Languages

Mother tongue	Italian
Other languages	English (good knowledge in reading, writing and speaking) French (good knowledge in reading, writing and speaking) German (basic knowledge in reading and speaking)

### University education

November 1983 – July 1991 – University of Milan (Italy) - Graduated with honours with a *Laurea* in Physics (Main courses: Nuclear Measurements Laboratory, Nuclear and Particle Physics, Electronics). Thesis: *Transizione a radiofrequenza per un fascio di idrogeno atomico ad alta polarizzazione* (in Italian).

### Professional experience, Career Evolution and Functions

Jan 2021 - present	Deputy Head, Beams Department
Jan 2021 - present	Coordinator of the "Physics Beyond Collider" Project
Oct 2014 – Dec 2020	Leader of the Accelerator and Beam Physics (ABP) Group of the Beams (BE) Department at CERN.
Feb 2013 – Dec 2020	Coordinator of the Work Package 2 (Accelerator Physics) of the High Luminosity LHC Project at CERN.
Jan 2009 – Sep 2014	Deputy Leader of the Accelerator and Beam Physics (ABP) Group of the Beams (BE) Department at CERN.
Jan 2005 – Dec 2013	Leader of the "LHC Injector Synchrotrons" Section in the Accelerator and Beam Physics Group of the BE Department at CERN.
Jul 2003 – present	Senior Physicist in the Accelerators and Beam Physics Group of the AB/BE Departments at CERN
Jan 2003 – Jun 2003	Physicist in the Accelerators and Beam Physics Group of the AB Department at CERN
Feb 1995 – Dec 2002	Physicist in the Operation Group of the SL Division at CERN
Mar 1992 – Jan 1995	Fellow in the TERA Project (leader U. Amaldi – CERN and University of Milan). Head of the laboratory LARA (Laboratori Avanzati Ricerche Adroterapiche - Novara, Italy)
Nov-Dec 1991	Invited at CERN in the PPE/GE group (████████████████████) to work at the design of a spectrometer magnet envisaged for the NA48 experiment
1986 – 1987	High School Mathematics teacher (Istituto Professionale di Lancenigo – Italy)

## Functions and activities as CERN staff member

## High-Luminosity LHC Project:

- Coordinator of the Beam Dynamics Work Package since February 2013.

## LHC Commissioning and Operation:

- Member of the LHC commissioning team with responsibility for the LHC cold check-out coordination (2008), LHC Machine Coordinator (2009-2013) and LHC Machine Development Coordinator (2014)
- Deputy Coordinator of the LHC Hardware Commissioning team responsible for the commissioning of the superconducting circuits of the LHC machine (March 2009-March 2010).
- Deputy Chairman of the LHC Beam Operation Committee (2011-2014) responsible for the follow-up of the operational issues for the LHC.

## PS-SPS Complex performance follow-up:

- Chair of the Beam Loss and Radiation Working Group (2005): joint AB – SC/RP working group charged of identifying measures and upgrades aimed at reducing beam losses and their radiological impact during operation in the PS-SPS Complex.
- Chair of the LHC Injectors' Instrumentation Specification Board (2005) in charge of defining the functional specifications for the beam instrumentation in the LHC Injectors.
- Scientific Secretary (2003-2004) and Deputy Chairman (2004-2007) of the Accelerator Performance Committee. The Committee was in charge of following-up, evaluate and optimise the performance of the beams in the PS and SPS accelerator complex, setting priorities for machine studies, making recommendations and taking decisions to achieve the objectives set by the AB Department in particular for LHC-type beams.
- Coordinator of the Machine Studies in the SPS (1997-2002) and in the PS-SPS complex (2003-2006).
- Main contributions to accelerator operation and studies:
  - Demonstration of the feasibility of operating the SPS with high intensity beams for CNGS with the achievement of record intensities (above  $5 \times 10^{13}$  p/cycle) in collaboration with the Accelerator Physics, Operation and Radio Frequency teams.
  - Commissioning of the SPS as LHC injector and achievement of the nominal performance in collaboration with the Accelerator Physics, Operation and Radio Frequency teams. Transverse single particle beam dynamics (SPS and injection transfer line optics) and collective effects (electron cloud effects and instabilities) have been studied and addressed in view of obtaining the required performance.

## Operation:

- SPS machine coordinator (2001-2006).
- SPS and LEP operation on a shift basis as Engineer in Charge (1995-2002).
- CPS liaison for the matters related to the operational and machine development beams (1996-2002).

- OP coordinator (2001-2002) for the GTPM<sup>&</sup> Project: joint PS/OP, SL/OP and ST/MA project in charge of defining procedures and informatics tools to guide the PCR and TCR operators in the restart of the SPS accelerator and technical systems after a major breakdown. The informatics tool is in use by the Technical Infrastructure operators since 2003.
- OP coordinator for the TZ (SL/CO-SL/OP) Project for the Controls of the Transfer Lines and Extraction Elements in the SPS (1997-2000). The application software has been in use in operation from 1998 to 2006.

#### Others:

- Lecturer on Accelerators and Accelerator Physics for the CERN's High School Teacher programme (2014-2015)
- Second Alternate Member of the Joint Advisory Disciplinary Board nominated by the Director General (2009-2014)
- First Alternate Member of the Joint Advisory Disciplinary Board nominated by the Director General (2015-2017)
- Referee for Physical Review Special Topics - Accelerators and Beams, a peer-reviewed online open-access international journal published by the American Physical Society.
- Referee for Journal of Instrumentation, a peer-reviewed, online-only international journal created by the International School for Advanced Studies (SISSA) and Institute of Physics (IOP) Publishing.
- CERN guide (1995-2000). Volunteer for the 2008 Open day.

#### Activity in the TERA Project

The TERA Project is a feasibility study for an accelerator-based facility for cancer therapy with hadrons in a hospital. The proposed accelerator provides proton beams with kinetic energies up to 250 MeV and 400 MeV/u fully stripped light ions. The irradiation facilities include two isocentric gantries for 250 MeV protons, allowing multi-port treatment in order to enhance the dose delivered to the tumour without increasing that to healthy tissues.

Contributions have been given to conceptual design of the synchrotron (lattice, optics, acceleration system), of the beam delivery system and of their main hardware components.

#### Thesis work

The thesis work was conducted in the frame of the INFN\* project JPT aiming at the realisation of a polarised-proton gas-jet target for High-Energy Physics experiments. A high degree of proton polarisation (> 90 %) can be obtained by selecting a hyperfine state of the hydrogen atom. This selection can be achieved by means of two sextupoles (providing Stern-Gerlach separation) and a radiofrequency transition unit located between them. A weak magnetic field (~ 100 G) is then sufficient to orient the electronic spin and therefore the proton spin.

The work consisted in the design of a system (consisting of a dipole magnet and a radiofrequency unit) to induce an adiabatic transition between two hyperfine states of the hydrogen atom.

A prototype of the RF system was built and tested.

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<sup>&</sup> Gestion Technique des Pannes Majeures.

<sup>\*</sup> Istituto Nazionale di Fisica Nucleare – Italy.

## INTERNATIONAL COMMITTEES/REVIEWS MEMBERSHIP

1. *Proton Improvement Plan – III Working Group (February 2020 – present)*
2. *Review of the Research Activities of the Karlsruhe Institute of Technology – Panel Member, 13-16 February 2018*
3. *International Particle Accelerator Conference 2018 – Organizing Committee*
4. *International Union of Pure and Applied Physics Working Group on Accelerator Science - WG14 (February 2016 – present)*
5. *International Particle Accelerator Conference 2017 – Organizing Committee Chair*
6. *International Particle Accelerator Conference 2016 – Organizing Committee*
7. *International Particle Accelerator Conference 2015 – Scientific Programme Committee*
8. *Board of the European Physical Society Accelerator Group, Chair (June 2014 – May 2017)*
9. *International Particle Accelerator Conference 2014 – Scientific Programme Committee Chair*
10. *Reviewer for the Swiss National Science Foundation (2014)*
11. *International Particle Accelerator Conference 2013 – Scientific Programme Committee*
12. *Reviewer for the Natural Sciences and Engineering Research Council of Canada (2013)*
13. *Science and Technology Facilities Council (STFC) review panel for accelerator projects, Cockcroft Institute, 15-16 March 2012*
14. *Board of the European Physical Society Accelerator Group, Chair-elect (September 2011- June 2014)*
15. *Reviewer for the Agenzia Nazionale per la Valutazione del Sistema Universitario e della Ricerca (ANVUR - Italian Agency for the Evaluation of the University and Research Systems) (since 2011)*
16. *Science and Technology Facilities Council (STFC) review panel for accelerator projects, Rutherford Appleton Laboratory, 15-16 August 2011.*
17. *International Particle Accelerator Conference 2011 – Scientific Programme Committee*
18. *International Particle Accelerator Conference 2010 – Organizing Committee*
19. *PS Booster Review with LINAC4, CERN, 15-16 January 2009*
20. *Board of the European Physical Society Accelerator Group – Elected Member (2008 – present)*
21. *Particle Accelerator Conference 07 - Scientific Program Committee*
22. *Director's Preliminary Technical Review of the Proton Driver, Fermilab, Chicago, USA – 15-17 March 2005.*

## INVITED TALKS AND SEMINARS

1. *LHC/HL-LHC and Injectors - status and prospects, INFN-Gruppo I meeting, Roma, Italy, 21<sup>st</sup> September 2016.*
2. *Beam dynamics, instrumentation and measurement techniques for LHC and its High Luminosity Upgrade, PhD International Summer School "Italo Gorini" on Instrumentation and Measurements, Cagliari, Italy, 9<sup>th</sup> September 2016.*
3. *Update of the HL-LHC Baseline Configuration, operation scenarios and performance projections, ICHEP2016, Chicago, USA, 4<sup>th</sup> August 2016.*
4. *The HL-LHC Machine, LHCP2016, Lund, Sweden, 17<sup>th</sup> June 2016.*
5. *The HL-LHC Project at CERN, Lawrence Berkeley National Laboratory, 17<sup>th</sup> May 2016.*
6. *LHC Status and prospects, INFN-Gruppo I meeting, Lecce, Italy, 30<sup>th</sup> September 2015.*
7. *The LHC and its upgrade to HL-LHC, "Giornate di Studio sui Rivelatori - Scuola F. Bonaudi", Torino, Italy, 31<sup>st</sup> October 2014.*
8. *LHC Machine Upgrade, IFD2014, INFN Workshop on Future Detectors for HL-LHC, Trento, Italy, 11<sup>th</sup> March 2014.*
9. *LHC Status and Perspectives, Les Rencontres de Physique de la Vallée d'Aoste, Aosta, Italy, 1<sup>st</sup> March 2014.*

10. *LHC operational experience and future plans*, 99<sup>th</sup> Meeting of the Italian Physical Society, Trieste, Italy, 23<sup>rd</sup> September 2013.
11. *LHC and its High-Luminosity Upgrade*, 1<sup>st</sup> oPAC Topical Workshop: 'Grand Challenges in Accelerator Optimisation', CERN, Switzerland, 26<sup>th</sup> June 2013.
12. *LHC and LHC Upgrade*, Heraeus Seminar, 517. W. & E. Heraeus Seminar on 'Accelerator physics for intense ion beams', Physikzentrum Bad Honnef, Germany, 14<sup>th</sup> October 2012.
13. *LHC Status and Prospects*, INFN-Gruppo I meeting, Torino, Italy, 26<sup>th</sup> September 2012.
14. *LHC Status and Performance*, INFN-Gruppo I meeting, Bari, Italy, 21<sup>st</sup> September 2011.
15. *LHC Status and Performance*, LHCb collaboration meeting, Edinburgh, United Kingdom, 1<sup>st</sup> July 2011.
16. *LHC Status and Plans*, Physics at LHC, Perugia, Italy, 6<sup>th</sup> June 2011.
17. Keynote talk: *The Engineering needed for Particle Physics* at the 11<sup>th</sup> International Conference of the European Society for Precision Engineering and Nanotechnology, Como, Italy, 24 May 2011.
18. *Status of LHC Operations*, Advanced Studies Institute on Symmetries and Spin (SPIN-Praha-2010), Prague, Czech Republic, 19 July 2010.
19. *LHC commissioning status*, 3<sup>rd</sup> Top Workshop @ Grenoble: from the TeVatron to ATLAS, Grenoble, France, 23 October 2008.
20. *LHC commissioning status*, 11<sup>th</sup> Topical Seminar on Innovative Particle and Radiation Detectors (IPRD08), Siena, Italy, 1 October 2008.
21. *LHC status and commissioning plans*, ATLAS France Physics Workshop, Seignosse (France), 10 September 2007.
22. *The CNGS beam challenge*, Seminar at the Laboratori Nazionali Gran Sasso (Italy), 11 May 2005.
23. *Results of the Scrubbing Run in the SPS*. CERN AB seminar, 22 July 2004 (with J.-M. Jimenez).
24. *Electron Cloud Studies at the SPS - Beam Stability Issues*, LHC Machine Advisory Committee, 12 July 2004.
25. *Beam Quality Preservation in the CERN PS-SPS Complex*, EPAC 2004, Lucerne, Switzerland, 5-9 July 2004.
26. *Beam Observations With Electron Cloud in the CERN PS & SPS Complex*, 31<sup>st</sup> ICFA Advanced Beam Dynamics Workshop (E-CLOUD '04), Napa, USA, 19-23 April, 2004.
27. *Status of the LHC proton beam in the SPS*. CERN SL Seminar, 4 July 2002.
28. *Status of the LHC proton beam in the CERN SPS*. EPAC 2002, La Villette, Paris, France, 3-7 June 2002.
29. *Electron Cloud and Ion Effects*, EPAC 2002, La Villette, Paris, France, 3-7 June 2002.
30. *Observations of the Electron Cloud Effects at the CERN SPS* – 8<sup>th</sup> ICFA Advanced Beam Dynamics Mini-Workshop on Two-Stream Instabilities in Particle Accelerators and Storage Rings, 16-18 February 2000, Santa Fe, USA.
31. *Emittance measurements in the PS-SPS transfer line* - 4<sup>th</sup> ICFA Beam Dynamics Workshop on Transverse Emittance Preservation and Measurement, 5-7 November 1997 – CERN.
32. *LEP 2: Stato della macchina e prospettive*, PiLEP IX Incontro sulla Fisica a LEP - 2-4 April 1997, Pisa, Italy.
33. *Lead ions in the SPS*. CERN SL Seminar, 11 April 1996 (with T. Bohl).
34. *The Italian Project for a Hadrontherapy Centre*, Frontier Detectors for Frontier Physics: Sixth Pisa meeting on Advanced Detectors, La Biodola, Isola d'Elba, Italy, 22 - 28 May 1994.

## LIST OF PUBLICATIONS

## Contribution to Books

1. I. Béjar Alonso, O. Brüning, P. Fessia, M. Lamont, L. Rossi, L. Tavian, M. Zerlauth, Eds., *High-Luminosity Large Hadron Collider (HL-LHC) Technical Design Report*, CERN-2020-010.
2. M. Calviani, B. Goddard, R. Jacobsson, M. Lamont, Eds., *SPS Beam Dump Facility - Comprehensive Design Study*, CERN-2020-002
3. O. Brüning, M. Klein Eds., *The Large Hadron-Electron Collider at the HL-LHC*, CERN-ACC-NOTE-2020-0002.
4. D. Angal-Kalinin et al., *PERLE. Powerful energy recovery linac for experiments. Conceptual design report*, J. Phys. G: Nucl. Part. Phys. 45 (2018) 065003.
5. G. Apollinari, I. Béjar Alonso, O. Brüning, P. Fessia, M. Lamont, L. Rossi, L. Tavian Eds., *High-Luminosity Large Hadron Collider (HL-LHC), Technical Design Report V.0.1*, CERN-2017-007-M
6. V.R.W. Schaa, G. Arduini, M. Lindroos, J. Pranke, Eds., *Proceedings of the 8<sup>th</sup> International Particle Accelerator Conference - IPAC17*, 14 - 19 May 2017 - Copenhagen, Denmark, JACoW 2017 and J. Phys.: Conf. Ser. 874 (2017).
7. C. Petit-Jean-Genaz, G. Arduini, M. Peter, V.R.W. Schaa, Eds., *Proceedings of the 5<sup>th</sup> International Particle Accelerator Conference - IPAC'14*, 15 - 20 Jun 2014 - Dresden, Germany, JACoW 2014.
8. *The High Luminosity Large Hadron Collider: The New Machine for Illuminating the Mysteries of Universe*. O. Brüning, L. Rossi, Eds. World Scientific 2015.
9. The HiLumi LHC Collaboration, *HL-LHC Preliminary Design Report*, G. Apollinari, I. Béjar Alonso, O. Brüning, M. Lamont, L. Rossi Eds., CERN-2015-005.
10. *LHC Design Report-Vol. 3: the LHC Injector Chain*, M. Benedikt, P. Collier, V. Mertens, J. Poole, K. Schindl, Eds., CERN-2004-003-V-3. CERN, 2004.
11. S. Agosteo et al., *The National Centre for Oncological Hadrontherapy. Updates and Revisions*. U. Amaldi and D. Campi Eds., INFN, Frascati, 1995.
12. The TERA Collaboration. *The TERA Project and the Centre for Oncological Hadrontherapy. Second Edition*. U. Amaldi and M. Silari Eds., INFN, Frascati, 1995.
13. The TERA Collaboration. *The TERA Project and the Centre for Oncological Hadrontherapy*. U. Amaldi and M. Silari Eds., INFN, Frascati, 1994.

## Conference/Workshop Proceedings, International Journals, Departmental and Divisional Notes

1. R. Calaga et al., *First demonstration of the use of crab cavities on hadron beams*, Phys. Rev. Accel. Beams 24, 062001
2. S. Kostoglou et al., *Impact of the 50 Hz harmonics on the beam evolution of the Large Hadron Collider*, Phys. Rev. Accel. Beams 24, 034002
3. S. Kostoglou et al., *Origin of the 50 Hz harmonics in the transverse beam spectrum of the Large Hadron Collider*, Phys. Rev. Accel. Beams 24, 034001
4. W. Scandale et al., *Observation of strong reduction of multiple scattering for channeled particles in bent crystals*, Phys. Lett. B 804 (2020) 135396.
5. X. Buffat et al., *Transverse Instabilities*, Proceedings of the 9th LHC Operations Evian Workshop, Evian Les Bains, France, 30 Jan - 1 Feb 2019, pp.233-243.
6. D. Mirarchi et al., *Special Losses during LHC Run 2*, Proceedings of the 9th LHC Operations Evian Workshop, Evian Les Bains, France, 30 Jan - 1 Feb 2019, pp.213-220.
7. L. Medina, R. Tomás, G. Arduini, M. Napsuciale, *Assessment of the performance of High-Luminosity LHC operational scenarios: integrated luminosity and effective pile-up density*, Can. J. Phys. 97 (2019) 498-508.
8. W. Scandale et al., *Focusing of 180 GeV/c pions from a point-like source into a parallel beam by a bent silicon crystal*, Nuclear Inst. and Methods in Physics Research B 446 (2019) 15-18.

9. D. Gamba et al., *Update of beam dynamics requirements for HL-LHC electrical circuits*, CERN-ACC-2019-0030.
10. O. Brüning et al., *LHC Full Energy Exploitation Study: Operation at Ultimate Energy of 7.5 TeV*, CERN-ACC-2019-0015.
11. W. Scandale et al., *Dechanneling of high energy particles in a long bent crystal*, Nuclear Inst. and Methods in Physics Research B 438 (2019) 38–41.
12. E. Métral et al., *Space charge and transverse instabilities at the CERN SPS and LHC*, Proceedings of the 13th International Computational Accelerator Physics Conference (ICAP 2018), Key West, FL, USA, 20 - 24 Oct 2018, SUPAG01.
13. G. Arduini, O. Brüning, M. Klein, *Energy frontier DIS at CERN: the LHeC and the FCC-eh, PERLE*, Proceedings of the XXVI International Workshop on Deep-Inelastic Scattering and Related Subjects, 16-20 April 2018, Kobe, Japan, Proceedings of Science (DIS2018)183
14. L. Medina Medrano et al., *New High Luminosity LHC Baseline and Performance at Ultimate Energy*, CERN-ACC-2018-069 and Proceedings of the 9th International Particle Accelerator Conference, Vancouver, Canada, 29 Apr - 4 May 2018, MOPML009
15. B. Salvant et al., *Experimental Characterisation of a Fast Instability Linked to Losses in the 16L2 Cryogenic Half-Cell in the CERN LHC*, CERN-ACC-2018-175 and Proceedings of the 9th International Particle Accelerator Conference, Vancouver, Canada, 29 Apr - 4 May 2018, THPAF058
16. A. Bogacz et al., *PERLE - Lattice Design and Beam Dynamics Studies*, CERN-ACC-2018-180 and Proceedings of the 9th International Particle Accelerator Conference, Vancouver, Canada, 29 Apr - 4 May 2018, THPMK105
17. W. Scandale et al., *Focusing of a particle beam by a crystal device with a short focal length*, Nucl. Instrum. Methods Phys. Res., B 414 (2018) 104-106.
18. W. Scandale et al., *Study of inelastic nuclear interactions of 400 GeV/c protons in bent silicon crystals for beam steering purposes*, Eur. Phys. J. C (2018) 78: 505.
19. J. Qiang, S. Paret, A. Ratti, J. Barranco, T. Pieloni, G. Arduini, X. Buffat, Y. Papaphilippou, *Simulation of beam-beam interaction with crab cavities for LHC upgrade*, Nuclear Instruments and Methods in Physics Research A 900 (2018) 53–59.
20. L. E. Medina Medrano, R. Tomas Garcia, G. Arduini, M. Napsuciale, *Effective pile-up density as a measure of the experimental data quality for High-Luminosity LHC operational scenarios*, CERN-ACC-2018-0003.
21. W. Scandale et al., *Comprehensive study of beam focusing by crystal devices*, Physical Review Accelerators and Beams, 21, 014702 (2018)
22. D. Gamba, G. Arduini, M. Cerqueira Bastos, J. Coello De Portugal - Martinez Vazquez, R. De Maria, M. Giovannozzi, M. Martino, R. Tomas Garcia, Rogelio, *Beam dynamics requirements for HL–LHC electrical circuits*, CERN-ACC-2017-0101.
23. W. Scandale et al., *Measurements of multiple scattering of high energy protons in bent silicon crystals*, Nucl. Instr. Meth. B 402 (2017) 291–295.
24. L. Medina Medrano, G. Arduini, R. Tomás, *Studies on Luminous Region, Pile-up and Performance for HL-LHC Scenarios*, CERN-ACC-2017-135, Proceedings of the 8th International Particle Accelerator Conference, Copenhagen, Denmark, 14-19 May 2017, G. Arduini, M. Lindroos, J. Pranke, V.R.W. Schaa, M. Seidel Eds., p. 1908-1911.
25. M. Lamont et al., *The SPS Beam Dump Facility*, CERN-ACC-2017-157, Proceedings of the 8th International Particle Accelerator Conference, Copenhagen, Denmark, , 14-19 May 2017, G. Arduini, M. Lindroos, J. Pranke, V.R.W. Schaa, M. Seidel Eds., p. 2389-2391.
26. A. Alekou, F. Antoniou, R. Appleby, G. Arduini, H. Bartosik, R. Calaga, Y. Papaphilippou, C. Welsch, *SPS Studies in Preparation for the Crab Cavity Experiment*, CERN-ACC-2017-203, Proceedings of the 8th International Particle Accelerator Conference, Copenhagen, Denmark, 14-19 May 2017, G. Arduini, M. Lindroos, J. Pranke, V.R.W. Schaa, M. Seidel Eds., p. 2133-2135.
27. O. Brüning et al., *LHC Full Energy Exploitation Study: Operation at 7 TeV*, CERN-ACC-2017-0086.
28. G. Arduini et al., *What can be learnt in Run 2 for Run 3 and HL-LHC Runs*, Proceedings of the 7th Evian Workshop on LHC Beam Operation, Evian, France, 13-15 December 2016, S. Dubourg, B. Goddard, G. Trad, eds., p. 255-264.

29. L. Carver et al., *Instabilities and beam induced heating in 2016*, Proceedings of the 7<sup>th</sup> Evian Workshop on LHC Beam Operation, Evian, France, 13-15 December 2016, S. Dubourg, B. Goddard, G. Trad, eds., p. 141-146.
30. X. Buffat et al., *Long-range and head-on beam-beam: what are the limits?*, Proceedings of the 7<sup>th</sup> Evian Workshop on LHC Beam Operation, Evian, France, 13-15 December 2016, S. Dubourg, B. Goddard, G. Trad, eds., p. 133-140.
31. B. Salvant et al., *Beam Induced RF Heating in LHC in 2015*, CERN-ACC-2016-279, Proceedings of the 7<sup>th</sup> International Particle Accelerator Conference, Busan, Korea, 8 - 13 May 2016, C. Petit-Jean-Genaz, D. E. Kim, K. S. Kim, I. S. Ko, K. R. Kim, V.R.W Schaa Eds., p. 602-605.
32. F. Antoniou, G. Arduini, M. Hostettler, M. Lamont, S. Papadopoulou, Y. Papaphilippou, G. Papotti, Giulia, M. Pojer, B. Salvachua, Belen, M. Wyszynski, *LHC Luminosity Modelling for RUNII*, CERN-ACC-2016-268, Proceedings of the 7<sup>th</sup> International Particle Accelerator Conference, Busan, Korea, 8 - 13 May 2016, C. Petit-Jean-Genaz, D. E. Kim, K. S. Kim, I. S. Ko, K. R. Kim, V.R.W Schaa Eds., p. 1403-1406.
33. J. Qiang, G. Arduini, J. Barranco, Y. Papaphilippou, T. Pieloni, *Beam-beam Simulation of Crab Cavity with Frequency Dependent Noise for LHC Upgrade*, CERN-ACC-2016-236, Proceedings of the 7<sup>th</sup> International Particle Accelerator Conference, Busan, Korea, 8 - 13 May 2016, C. Petit-Jean-Genaz, D. E. Kim, K. S. Kim, I. S. Ko, K. R. Kim, V.R.W Schaa Eds., p. 1691-1694.
34. G. Arduini et al., *High Luminosity LHC: challenges and plans*, J. Instrum. 11 C12081 (2016)
35. The ATLAS Collaboration, *Beam-induced and cosmic-ray backgrounds observed in the ATLAS detector during the LHC 2012 proton-proton running period*, JINST 11 (2016) P05013
36. W. Scandale et al., *Observation of channeling for 6500GeV/c protons in the crystal assisted collimation setup for LHC*, Physics Letters B758(2016)129-133
37. W. Scandale et al., *Observation of strong leakage reduction in crystal assisted collimation of the SPS beam*, Physics Letters B748(2015)451-454
38. W. Scandale et al., *Comparative results on the deflection of positively and negatively charged particles by multiple volume reflections in a multi-strip silicon deflector*, Pis'ma v ZhETF, vol. 101, iss. 10, pp. 755 - 760, May 2015.
39. W. Scandale et al., *Observation of nuclear dechanneling length reduction for high energy protons in a short bent crystal*, Physics Letters B743(2015)440-443.
40. K. Li et al., *How to fight collective effect limitations*, Proceedings of the 6<sup>th</sup> Evian Workshop on LHC Beam Operation, Evian, France, 15-17 December 2015, B. Goddard, S. Dubourg eds., CERN-ACC-2015-376, p. 211-218.
41. L. Carver et al., *Instabilities and beam induced heating in 2015*, Proceedings of the 6<sup>th</sup> Evian Workshop on LHC Beam Operation, Evian, France, 15-17 December 2015, B. Goddard, S. Dubourg eds., CERN-ACC-2015-376, p. 95-100.
42. G. Papotti, G. Trad, F. Antoniou, G. Arduini, M. Hostettler, G. Iadarola, S. Papadopoulou Y. Papaphilippou, *Luminosity modelling for the LHC*, Proceedings of the 6<sup>th</sup> Evian Workshop on LHC Beam Operation, Evian, France, 15-17 December 2015, B. Goddard, S. Dubourg eds., CERN-ACC-2015-376, p. 77-80.
43. W. Scandale et al., *Deflection of high energy protons by multiple volume reflections in a modified multi-strip silicon deflector*, Nuclear Instruments and Methods in Physics Research B 338 (2014) 108-111
44. M. Kuhn et al., *Origins of transverse emittance blow-up during the LHC energy ramp*, CERN-ACC-2014-0158, Proceedings of the 5<sup>th</sup> International Particle Accelerator Conference, Dresden, Germany, 15 - 20 June 2014, C. Petit-Jean-Genaz, G. Arduini, P. Michel, V.R.W. Schaa, Eds., p. 1021-1023.
45. G. Iadarola et al., *Analysis of the electron cloud observations with 25 ns bunch spacing at LHC*, CERN-ACC-2014-0120, Proceedings of the 5<sup>th</sup> International Particle Accelerator Conference, Dresden, Germany, 15 - 20 June 2014, C. Petit-Jean-Genaz, G. Arduini, P. Michel, V.R.W. Schaa, Eds., p. 1410-1412.
46. J. Qiang et al., *Strong-strong Beam-beam Simulation for the LHC Upgrade*, Proceedings of the 5<sup>th</sup> International Particle Accelerator Conference, Dresden, Germany, 15 - 20 June 2014, C. Petit-Jean-Genaz, G. Arduini, P. Michel, V.R.W. Schaa, Eds., p. 1006-1008.
47. G.L. Sabbi et al., *Conceptual Design Study of the High Luminosity LHC Recombination Dipole*, Proceedings of the 5<sup>th</sup> International Particle Accelerator Conference, Dresden, Germany, 15 - 20 June 2014, C. Petit-Jean-Genaz, G. Arduini, P. Michel, V.R.W. Schaa, Eds., p. 2712-2714.



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