

ALLEGATO B

UNIVERSITÀ DEGLI STUDI DI MILANO

selezione pubblica per n._1_ posto/i di Ricercatore a tempo determinato ai sensi dell'art.24, comma 3, lettera b) della Legge 240/2010 per il settore concorsuale _02/A1_____, settore scientifico-disciplinare ____FIS/01_____, presso il Dipartimento di FISICA "Aldo Pontremoli_____, (avviso bando pubblicato sulla G.U. n. __53__ del __05/07/2019____) Codice concorso __4131_

[SIMONE DI MITRI] CURRICULUM VITAE

INFORMAZIONI PERSONALI (NON INSERIRE INDIRIZZO PRIVATO E TELEFONO FISSO O CELLULARE)

COGNOME	DI MITRI
NOME	SIMONE
DATA DI NASCITA	[9, 10, 1976]

**INSERIRE IL PROPRIO CURRICULUM
(non eccedente le 30 pagine)**

First, Last Name	Simone Di Mitri.
Personal data	Male. Born in Terni, Italy, on October 9, 1976.
Contacts	Email: simone.dimitri@elettra.eu . Office: +39 040 375 8778. Web page: https://www.elettra.eu/People/SimoneDimitri
Keywords	Particle beam dynamics. Light sources. Teaching.
Present Position	Senior Scientist in Accelerators Group, Elettra Sincrotrone Trieste. Contract Professor of Particle Accelerator Physics, Univ. of Trieste.

Educational Record

2008/09 - 2011/10	Ph.D. in Accelerator Physics, Dept. of Mathematics and Natural Sciences, University of Groningen, The Netherlands. Title: <i>Machine design and electron beam control of a single-pass linac for free electron laser: the FERMI@Elettra case study.</i>
1995/09 - 2000/10	Master Degree (Laurea, 4-years course, 106/110) in Nuclear and Sub-Nuclear Physics, University of Pisa, Italy. Experimental Thesis in Accelerator Physics at the INFN-LNF, Rome, Italy. Title: <i>Single particle dynamics in the presence of sextupole nonlinearities in the electron-positron collider Daphne.</i>
1990/09 - 1995/07	Bachelor Degree (Diploma, 56/60) at the Senior High School (Scientific Lyceum) "G. Galilei", Terni, Italy.

Professional Record

2006/02 - present	Permanent employee in Elettra - Sincrotrone Trieste S.C.p.A., Level: 8-Quadro, Accelerators Group
2003/02 - 2006/02	Temporary employee in Elettra - Sincrotrone Trieste S.C.p.A., Level: 5-Quadro, Accelerators Group
2002/04 - 2002/10	Temporary employee in Elettra - Sincrotrone Trieste S.C.p.A., Level: 5-Quadro, Accelerators Group

Competences

<i>Design</i>	Linear, circular, recirculating and energy-recovery accelerators: · specification of accelerator components · analytical modeling and simulation of particle beam dynamics · linear and nonlinear optics, optimization tools · collective beam instabilities
<i>Commissioning & Operation</i>	· FERMI, free electron laser · TeraFERMI, THz user facility · Elettra, electron synchrotron · Daphne, e+/e- collider
<i>Specific Tasks</i>	For the Elettra 2.0 design project, in charge of (2017 – 2018): nonlinear dynamics, injection scheme, error budget, simulation of insertion devices, scheme for short photon pulses. Within the FERMI FEL Steering Committee, in charge of (2012 – 2018): electron optics and transport efficiency, characterization and control of collective effects (wakefields), optimization of the FEL spectral brilliance (microbunching), linac upgrade physics design, support to TeraFERMI user beam-times. Within the FERMI Commissioning Team, in charge of (2009 – 2012): commissioning schedule and activity plan.

Professional Responsibilities

2019 – 2021	Responsible of the upgrade of the FERMI Main Beam Dump line.
2018 – 2021	Task Leader for FEL design in the CompactLight EU-project.
2016 - 2017	Scientific and technical responsible of an industrial contract for the beam-time usage at FERMI.
2015 - 2017	Scientific and technical responsible of an industrial contract for the design of an ERL-EUV FEL for nano-lithography.
2003 – 2012	Responsible of the FERMI layout design and e-beam physics.
2002 – 2006	In charge of the design of Elettra injection and extraction transfer line.

Professional Services

International Committees

- 2010 - 2021 Scientific Program Committee of the International FEL Conference.
2016 - 2020 Scientific Advisory Board of the International Particle Accelerator Conference.
2018 - 2021 Scientific Advisory Committee of the MAX-IV FEL (Sweden).
2011 - 2013 Beam Dynamics Review Committee of the Pohang Accelerator Laboratory FEL (South Korea).

Spokeperson at EU-Projects

- 2017/10 - present Topic Leader for FELs in the *League of European Accelerator-based Photon Sources*.
2017/10 - 2018/01 Spokeperson for the Next Generation of FEL Developments in the *European Photon Science Strategy Panel*.
2013/01 - 2015/12 Spokeperson for beam microbunching and compression for seeded FELs in *FELs of Europe*.
2005/01 - 2008/12 Spokeperson for particle collective instabilities and nonlinear motion in FELs for *EUROFEL*.

Organization of Workshops

- 2017/09 Chairman of the Intern. ICFA mini-Workshop on Nonlinear Dynamics and Collective Effects in Particle Beams (NOCE), Arcidosso, Italy.
2007 - 2014 Member of the Organizing and Program Committee of the I-VI International Workshops on Microbunching Instability.

Referee for peer-reviewed Journals

Nature Communications, Reviews of Modern Physics, Physical Review Letters, New Journal of Physics, Journal of Physics B, Physical Review Accel. Beams, Nuclear Instruments and Methods in Physics Research, A and B, Optics Communications, IEEE Transactions on Nuclear Science and Techniques, Nuclear Science and Techniques, Applied Sciences MDPI.

Scientific Collaborations

INFN-LNF, INFN-MI, ENEA (Italy), Cockroft Institute (UK), KVI (The Netherlands), ESRF, University of Lille (France), MAX-Lab (Sweden), ALBA-Cells (Spain), JLAB, LBNL, SLAC, MIT, Univ. of Maryland (U.S.A.), Univ. of Monash (Australia), CERN (Switzerland).

Leading of Major Collaborations

- 2017 - 2018 Demonstration of coherent THz emission enhanced by coherent synchrotron radiation instability in a magnetic arc.
Institutions: Elettra Sincrotrone Trieste (I), University of Rome La Sapienza (I), University of Lille (F).
Reference: S. Di Mitri et al., *Coherent THz Emission Enhanced by Coherent Synchrotron Radiation Instability*, Sci. Reports., 8, 11661 (2018).
- 2016 - 2018 Benchmarking of 3-dimensional effects of coherent synchrotron radiation on electron beams for high brilliance light sources.
Institutions: Elettra Sincrotrone Trieste (I), AsTeC - Cockcroft Institute (UK), Pulsar Physics (NL), Private Customer (NL).
Reference: A. Brynes et al. & S. Di Mitri, *Beyond the limits of 1D coherent synchrotron radiation*, New J. Phys. 20 (2018) 073035.
- 2015 - 2017 Design of a compact magnetic bunch length compressor of an energy-recovery linac-driven EUV free-electron laser for nano-lithography.
Institutions: Elettra Sincrotrone Trieste (I), Thomas Jefferson National Laboratory (USA, VI), Private Customer (NL).
Reference: J. A. G. Akkermans, S. Di Mitri, D. Douglas, I. D. Setija, *Compact compressive arc and beam switchyard for energy recovery linac-driven UV FEL*, Phys. Rev. Accel. Beams 20 080705 (2017).
- 2003 - 2006 Start-to-End simulation of the first externally-seeded EUV Free-Electron Laser, FERMI@Elettra.
Institutions: Elettra Sincrotrone Trieste (I), Cockcroft Institute (UK), University of Liverpool (UK), Lawrence Berkeley national Laboratory (USA, CA), Northern Illinois University (USA, IL), Argonne National Laboratory (USA, MI), University of New Mexico (USA, NM) University of Maryland (USA, MD).
Reference: S. Di Mitri et al., *Design and simulation challenges for FERMI@elettra*, Nucl. Instr. and Methods in Phys. Res. A 608 (2009) 19–27.

Teaching & Education

National Schools

2019/2020	Contract Professor of Particle Accelerator Physics, Univ. of Trieste, Dept. of Physics, FIS/04, 6 CFU, 48 hours.
2018/2019	Contract Professor of Particle Accelerator Physics, Univ. of Trieste, Dept. of Physics, FIS/04, 6 CFU, 48 hours. Faculty member for the Friuli Venezia Giulia regional project <i>Pages4</i> , High Schools, 6 hours.
2017/2018	Contract Professor of Particle Accelerator Physics, Univ. of Trieste, Dept. of Physics, FIS/04, 6 CFU, 48 hours. Faculty member for the Friuli Venezia Giulia regional project <i>Pages3</i> , High Schools, 6 hours.
2016/2017	Contract Professor of Particle Accelerator Physics, Univ. of Trieste, Dept. of Physics, FIS/04, 6 CFU, 48 hours. Faculty member for the Friuli Venezia Giulia regional project <i>Pages2</i> , High Schools, 6 hours.
2015/2016	Contract Professor of Particle Accelerator Physics, Univ. of Trieste, Dept. of Engineering and Architecture, FIS/01, 6 CFU, 48 hours.
2014/2015	Contract Professor of Particle Accelerator Physics, Univ. of Trieste, Dept. of Engineering and Architecture, FIS/01, 6 CFU, 48 hours.
2013/2014	Contract Professor of Particle Accelerator Physics, Univ. of Trieste, Dept. of Engineering and Architecture, FIS/01, 6 CFU, 48 hours.
2012/2013	Contract Professor of Particle Accelerator Physics, Univ. of Trieste, Dept. of Engineering and Architecture, FIS/01, 6 CFU, 48 hours.

International Schools

2019	Instructor at the Italian School on Synchrotron Light Sources, Trieste, Italy; 2 hours.
2016	Instructor at Cern Accelerator School: Advanced Course on ERLs and FELs, Hamburg, Germany; 4 hours.
2015	Instructor at U.S. Particle Accelerator School: Linac Design for FELs, Rutgers University, East Brunswick, NJ, U.S.A.; 40 hours.
2014	Faculty of Accelerator Physics at the International Nathiagali Summer College, Islamabad, Pakistan; 6 hours.
2013	Instructor at U.S. Particle Accelerator School: Linac Design for FELs, Colorado State University, Fort Collins, CO, U.S.A.; 40 hours.
2005	Tutor at Cern Accelerator School (Advanced), Trieste, Italy; 4 hours.

Students Supervision & Thesis Review

2019/02 - 2019/09	1 Post-Graduate st., Univ. of Trieste, Dept. of Physics. Stage: particle beam dynamics in low emittance storage rings. 1 Graduate st. (2nd level), Univ. of Trieste, Dept. of Physics. Thesis: intrabeam scattering and microbunching in e-linacs for FELs. 1 Graduate st. (1st level), Univ. of Trieste, Dept. of Physics. Thesis: calculation of spectral brilliance in Elettra 2.0
2018/09 - 2019/05	1 Graduate st. (1st level), Univ. of Trieste, Dept. of Physics. Thesis: microbunching instability for the FERMI EEHG experiment.
2017/09 - 2018/05	1 Graduate st. (2nd level), Univ. of Trieste, Dept. of Engineering. Thesis: benchmark of wakefields in the FERMI linac and undulator.
2017/09 - 2018/05	1 Graduate st. (1st level), Univ. of Trieste, Dept. of Physics. Thesis: demonstration of coherent THz emission for TeraFERMI.
2008/02 - 2008/10	1 Ph.D. st., Univ. of Nova Gorica, Dept. of Physics. Thesis: schemes of seeded FELs in the VUV and soft x-rays.
2007/02 - 2007/10	1 Graduate st. (2nd level), Univ. of Nova Gorica, Dept. of Physics. Thesis: modelling and optimization of the FERMI FEL.
2017	Review of 1 Ph.D. Thesis, Univ. of Hamburg, Dept. of Physics. Thesis: external seeding schemes at FLASH FEL. Review of 1 Ph.D. Thesis, Univ. of Rome La Sapienza, Dept. of Engineering. Thesis: impedance budget for the LHC collimators.

Third Mission

2016/03 - 2017/12	Responsible for 1-week scientific-industrial user beam time at the FERMI FEL.
2016/03 - 2017/03	Responsible for the simulation of an energy-recovery UV FEL for industrial application in nano-lithography.
2015/11 - 2016/07	Responsible for the specification of parameters and reliability of an energy-recovery UV FEL for industrial application in nano-lithography.
2015/09 - 2015/10	Responsible for the magnetic lattice design of an energy-recovery UV FEL for industrial application in nano-lithography.

Recent Fields of Research

<i>Linear Colliders</i>	Preservation of electron beam brightness in turnaround loops and bunch length compressors.
<i>Linac-FELs</i>	Suppression of microbunching instability for improved spectral brilliance in (self-)seeded FELs. Schemes for the production of tuneable, self-synchronized, femtosecond-long two-color FEL pulses. Design of a cost-effective X-band linac-driven x-ray FEL.
<i>Storage Rings</i>	Production of sub-ps photon pulses in the soft and hard x-rays.
<i>ERL, Compton</i>	Optimization of compact recirculating lattices.

Scientific Production (Overview)

Number of articles on journals with:

5-years IF > 20 (2014)

5-years IF > 8 (2012 – 2019)

5-years IF > 1.5: 43 (2009 – 2019)

Number of chapters on books: 4

Number of talks at:

international conferences: 9

international workshops: 20

Italian conferences: 6

List of Talks

05/2019 - Invited	HDZR (Dresda, Germany): <i>Spectro-temporal pulse shaping at FERMI FEL</i>
02/2019 - Invited	ENEA (Frascati, Italy): <i>Modeling FEL Gain Length in the presence of e-Beam Collective Effects</i>
12/2018 - Invited	Time-resolved Experiments at new synchrotron radiation facilities (Trieste, Italy): <i>Overview of time-resolved schemes for synchrotrons</i>
09/2018 - Invited	8th German-Russian Travelling Seminar (Trieste, Italy): <i>How do synchrotrons and free-electron lasers work?</i>
04/2018 - Invited	Canadian-Italian Workshop on Future light Sources (Saskatoon, Canada): <i>Elettra 2.0, the machine.</i>
04/2018 - Invited	Canadian-Italian Workshop on Future light Sources (Saskatoon, Canada): <i>FERMI, the machine.</i>
03/2018 - Contrib.	FLS18 (Shanghai, China): <i>Compact Arc Compressor for FEL-Driven Compton Light Source and ERL-Driven UV FEL.</i>
10/2017 - Invited	Univ. of Chicago (Chicago, IL): <i>Benchmarking coherent synchrotron radiation.</i>
09/2017 - Contrib.	SIF (Trento, I): <i>Design study of high gradient, low impedance accelerating structures for the FERMI free-electron laser linac upgrade.</i>
10/2016 - Contrib.	NAPAC (Chicago, IL, USA): <i>Operating Synchrotron Light Sources with a High Gain Free Electron Laser.</i>
09/2016 - Contrib.	IRMMTHz Conf. (Copenhagen, DK): <i>THz Coherent Transition Radiation at TeraFERMI: Commissioning Results.</i>
09/2016 - Contrib.	SIF (Padova, I): <i>The FERMI Seeded FEL Facility: Operational Experience and Future Perspectives.</i>
09/2016 - Contrib.	SIF (Padova, I): <i>Operating Synchrotron Light Sources with a High Gain Free Electron Laser.</i>
08/2016 - Invited	Designing Future X-ray FELs (Daresbury, UK): <i>Modelling Linacs and their Components.</i>
02/2016 - Contrib.	TWICE-2 (Abingdon, UK): <i>Operating synchrotron light sources with a high gain free electron laser.</i>

08/2015 - Invited	Intern. FEL Conf. (Daejeon, South Korea): <i>Estimate of free electron laser gain length in the presence of collective effects.</i>
07/2015 - Contrib.	SILS (Trento, I): <i>Operating synchrotron light sources with a high gain free electron laser.</i>
06/2015 - Invited	ERL Workshop (Stony Brook Univ., NY): <i>Transverse emittance-preservign arc compressor.</i>
01/2015 - Invited	CLIC Workshop (CERN): <i>Exotic schemes of electron beam manipulation.</i>
09/2014 - Contrib.	SIF (Pisa, I): <i>Theoretical and experimental advances on Coherent Synchrotron Radiation and Microbunching Instability at FERMI.</i>
02/2014 - Invited	ASTEC (Daresbury, UK): <i>Opportunities for electron beam and FEL studies at CLARA.</i>
09/2013 - Invited	ALBA-CELLS (Barcelona, ES): <i>Introduction to FERMI FEL: Physics Studies.</i> Introduction to elegant.
08/2013 - Invited	Intern. FEL Conf. (New York, NY, USA): <i>Emittance control in the presence of collective effects in the FERMI@Elettra FEL linac driver.</i>
06/2013 - Invited	High Gradient Workshop (Trieste, Italy): <i>Electron beam brightness in NC linac-driven x-ray FELs.</i>
05/2013 - Invited	5th Microbunching Instability Workshop (Pohang, South Korea): <i>Suppression of microbunching instability with a magnetic chicane at FERMI@Elettra.</i>
05/2013 - Invited	5th Microbunching Instability Workshop (Pohang, South Korea): <i>Cancellation of CSR kicks with optics balance.</i>
04/2012 - Invited	LBNL (Berkeley, CA, USA): <i>Update on the FERMI@Elettra FEL Commissioning and Initial Operation.</i>
09/2011 - Invited	IPAC (San Sebastian, ES): <i>Commissioning and Initial Operation of FERMI@Elettra FEL.</i>
04/2011 - Invited	SPIE Conf., Advances in X-ray FELs (Prague, CZ): <i>FERMI@Elettra, a seeded free electron laser source for a broad scientific user program.</i>
01/2011 - Invited	KVI (Groningen, NL): <i>The 100 nm to 4 nm Single-pass, Linac-based FERMI@Elettra FEL.</i>
03/2010 - Invited	2 nd IRUVX-PP Annual Meeting (Hamburg, D): <i>FERMI@Elettra is under commissioning.</i>
10/2009 - Contrib.	SIF (Bari, I): <i>The 100 nm to 4 nm FERMI@Elettra FEL project.</i>
09/2009 - Invited	ICAP (San Francisco, CA, USA): <i>Design and Simulation Challenges for the FERMI@Elettra project.</i>
09/2009 - Invited	KIT (Karlsruhe, D): <i>The 100 nm to 4 nm FERMI@Elettra FEL project.</i> Introduction to elegant for the TBONE project.
10/2008 - Invited	2nd Microbunching Instability Workshop (Berkeley, CA, USA): <i>Overview and Recent Progress in Theory and Simulation.</i>
08/2006 - Invited	Intern. FEL Conf. (Berlin, D): <i>How to obtain high quality electron bunches in the presence of normal conducting linac wakefields.</i>

List of Publications

Peer Reviewed Journals

62. L. Serafini et al., *MariX, an advanced MHz-class repetition rate X-ray source for linear regime time-resolved spectroscopy and photon scattering*, Nucl. Instr. and Methods in Phys. Res. A **930** (2019), 167–172.
61. P. Rebernik et al., *Coherent soft x-ray pulses from an echo-enabled harmonic generation free-electron laser*, Nature Photonics, <https://doi.org/10.1038/s41566-019-0427-1> (2019).
60. S. Di Mitri et al., *Wakefield benchmarking at a single-pass high brightness electron linac*, Phys. Rev. Accel. and Beams, **22**, 014401 (2019).
59. S. Di Mitri, *One Way Only to Synchrotron Light Sources Upgrade ?*, J. Synchr. Rad., **25** (2018).
58. S. Di Mitri et al., *Coherent THz Emission Enhanced by Coherent Synchrotron Radiation Instability*, Sci. Reports, **8**, 11661 (2018).
57. A. Brynes et al. & S. Di Mitri, *Beyond the limits of 1D coherent synchrotron radiation*, New J. Phys. **20** (2018) 073035.
56. M. Ferrario et al., *EuPRAXIA@SPARC-LAB Design study towards a compact FEL facility at LNF*, Nucl. Instr. and Methods in Phys. Res. A **909** (2018), 134–138.
55. G. Campogiani et al., *Progress of the development of the ELI-NP GBS high level applications*, Nucl. Instr. and Methods in Phys. Res. A **909** (2018), 327–331.
54. R. K. Lam et al., *Two-photon absorption of soft X-ray free electron laser radiation by graphite near the carbon K-absorption edge*, Chem. Phys. Letters, **703C** (2018) 112–116.
53. R. K. Lam et al., *Soft X-ray Second Harmonic Generation as an Interfacial Probe*, accepted in Phys. Rev. Letters **120** 023901 (2018).
52. S. Di Mitri, S. Spampinati, *Microbunching instability study in a linac-driven free electron laser spreader beam line*, Phys. Rev. Accel. and Beams, **20**, 120701 (2018).
51. G. Penco et al., *Passive Linearization of the Magnetic Bunch Compression Using Self-Induced*

Fields, Phys. Rev. Letters **119** 184802 (2017).

50. A. Perucchi et al., *TeraFERMI: a superradiant beamline for THz nonlinear studies at the FERMI free electron laser facility*, Synch. Rad. News **4**, 30 (2017).

49. J. A. G. Akkermans, S. Di Mitri, D. Douglas, I. D. Setija, *Compact compressive arc and beam switchyard for energy recovery linac-driven UV FEL*, Phys. Rev. Accel. Beams **20** 080705 (2017).

48. N. Shafqat, S. Di Mitri, S. Nicastro and C. Serpico, *Design Study of High Gradient, Low Impedance Accelerating Structures for the FERMI Free Electron Laser Linac Upgrade*, Nucl. Instr. and Methods in Phys. Res. A **867** (2017), 78–87

47. E. Roussel et al., *Polarization characterization of soft x ray radiation at FERMI FEL-2*, Photonics **4** 29 (2017).

46. M. Placidi, S. Di Mitri, C. Pellegrini and G. Penn, *Compact FEL-Driven Inverse Compton Scattering Gamma-Ray Source*, Nucl. Instr. and Methods in Phys. Res. A **855** (2017) 55–60.

45. C.-Y. Tsai, S. Di Mitri, D. Douglas, R. Li, and C. Tennant, *Conditions for coherent-synchrotron-radiation-induced microbunching suppression in multibend beam transport or recirculation arcs*, Phys. Rev. Accel. Beams **20** 024401 (2017).

44. T. Takanashi et al., *Time-resolved observation of interatomic Coulombic decay induced by two-photon double excitation of Ne₂*, Phys. Rev. Letters **118** 033202 (2017).

43. D. Iablonskyi et al., *Slow Interatomic Coulombic Decay of Multiply Excited Ne Clusters*, Phys. Rev. Letters **117** 276806 (2016).

42. D. Gauthier et al., *Chirped pulse amplification in an extreme-ultraviolet free-electron laser*, Nat. Commun. **7**, 13688 doi: 10.1038/ncomms13688 (2016). (2016).

41. F. Bencivenga et al., *Four-wave-mixing experiments with seeded free electron lasers*, Faraday Discussions, DOI: 10.1039/C6FD00089D (2016).

40. K.C. Prince et al., *Coherent control with a short-wavelength free-electron laser*, Nature Photonics, **13** (2016) 1–5.

39. E. Roussel et al., *Multicolor High Gain Free Electron Laser Driven by Seeded Microbunching Instability*, Phys. Rev. Letters **115** 214801 (2016).

38. S. Di Mitri, *Feasibility study of a periodic arc compressor in the presence of coherent synchrotron radiation*, Nucl. Instr. and Methods in Phys. Res. A **806** (2016) 184–192.

37. S. Di Mitri and M. Cornacchia, *Operating synchrotron light sources with a high gain free electron laser*, New J. Phys. **17** (2015) 113006.

36. S. Di Mitri and M. Cornacchia, *Transverse emittance-preserving arc compressor for high-brightness electron beam-based light sources and colliders*, *Europhys. Lett.* **109** (2015) 62002.
35. S. Di Mitri, *On the Importance of Electron Beam Brightness in High Gain Free Electron Lasers*, *Photonics* **2** (2015) 317–341.
34. E. Allaria et al., *The FERMI Free Electron Lasers*, *J. Synch. Rad.* **22** (2015) 485–491.
33. P. Craievich et al., *Implementation of Radio-Frequency Deflecting Devices for Comprehensive High-Energy Electron Beam Diagnosis*, *IEEE Transactions on Nuclear Science*, **62**, 1 (2015) 1–11.
32. R. Fiorito et al., *Noninvasive emittance and energy spread monitor using optical synchrotron radiation*, *Phys. Rev. Special Topics – Accel. and Beams*, **17**, 122803 (2014).
31. S. Spampinati et al., *Laser heater commissioning at an externally seeded free-electron laser*, *Phys. Rev. Special Topics – Accel. and Beams*, **17**, 120705 (2014).
30. E. Allaria et al., *Control of the Polarization of a Vacuum-Ultraviolet, High-Gain, Free-Electron Laser*, *Phys. Rev. X*, **4**, 041040 (2014).
29. S. Di Mitri and S. Spampinati, *Estimate of free electron laser gain length in the presence of electron beam collective effects*, *Phys. Rev. Special Topics – Accel. and Beams*, **17**, 110702 (2014).
28. S. Di Mitri, *Intrabeam scattering in high brightness electron linacs*, *Phys. Rev. Special Topics – Accel. and Beams*, **17**, 074401 (2014).
27. S. Di Mitri, M. Cornacchia, *Electron Beam Brightness in Linac Drivers for Free Electron Lasers*, *Physics Reports* **539** (2014) 1–48.
26. S. Di Mitri and S. Spampinati, *Microbunching Instability Suppression with Electron-Magnetic-Phase Mixing*, *Phys. Rev. Letters*, **112**, 134802 (2014).
25. G. Penco, M. Danailov, A. Demidovich, E. Allaria, G. De Ninno, S. Di Mitri, W.M. Fawley, E. Ferrari, L. Giannessi, and M. Trovo', *Experimental Demonstration of Electron Longitudinal-Phase-Space Linearization by Shaping the Photoinjector Laser Pulse*, *Phys. Rev. Letters*, **112**, 044801 (2014).
24. E. Allaria, G. De Ninno, S. Di Mitri, W.M. Fawley, E. Ferrari, L. Frhlich, G. Penco, P. Sigalotti, S. Spampinati, C. Spezzani, and M. Trov, *Energy slicing analysis for time-resolved measurement of electron-beam properties*, *Phys. Rev. Special Topics – Accel. and Beams*, **17**, 010704 (2014).
23. S. Di Mitri, M. Cornacchia, *Merit functions for the linac optics design for colliders and light sources*, *Nucl. Instr. and Methods in Phys. Res. A* **735** (2014) 60–65.
22. E. Allaria et al., *Two Stage Seeded Soft X-Ray Free-Electron Laser*, *Nature Photonics*, **7** (2013) 913–918.

21. P. Craievich, S. Di Mitri, M. Milloch, G. Penco, and F. Rossi, *Modeling and experimental study to identify arrival-time jitter sources in the presence of a magnetic chicane*, Phys. Rev. Special Topics – Accel. and Beams, **16**, 090401 (2013).
20. B. Mahieu et al., *Two-colour generation in a chirped seeded free-electron laser: a close look*, Optics Express, Vol. 21 Issue 19 (2013) 22728–22741.
19. E. Allaria et al., *Two-colour pump-probe experiments with a twin-pulse seed extreme ultraviolet free-electron laser*, Nature Communications **4**, 2476 (2013).
18. S. Di Mitri, *Maximum brightness of linac-driven electron beams in the presence of collective effects*, Phys. Rev. Special Topics – Accel. and Beams, **16**, 050701 (2013).
17. S. Di Mitri, D. Castronovo, I. Cudin, and L. Froehlich, *Electron slicing for the generation of tunable femtosecond soft x-ray pulses from a free electron laser and slice diagnostics*, Phys. Rev. Special Topics – Accel. and Beams, **16**, 042801 (2013).
16. S. Di Mitri, M. Cornacchia, and S. Spampinati, *Cancellation of Coherent Synchrotron Radiation Kicks with Optics Balance*, Phys. Rev. Letters, **110**, 014801 (2013).
15. A. Perucchi, S. Di Mitri, G. Penco, E. Allaria, and S. Lupi, *The TeraFERMI Terahertz spurce at the seeded FERMI Free-Electron-Laser facility*, Rev. Sci. Instrum., **84**, 022702 (2013).
14. E. Allaria et al., *Tunability experiments at the FERMI@Elettra free-electron laser*, New J. Phys., **14**, 113009 (2012).
13. E. Allaria et al., *Highly coherent and stable pulses from the FERMI seeded free-electron laser in the extreme ultraviolet*, Nature Photonics, **6** (2012) 699–704.
12. S. Di Mitri, L. Froehlich and E. Karantzoulis, *Influence of longitudinally tapered collimators on a high brightness electron beam*, Phys. Rev. Special Topics – Accel. and Beams, **15**, 061001 (2012).
11. S. Di Mitri, E. M. Allaria, P. Craievich, W. Fwaley, L. Giannessi, A. Lutman, G. Penco, S. Spampinati and M. Trovo', *Transverse emittance preservation during bunch compression in the Fermi free electron laser*, Phys. Rev. Special Topics – Accel. and Beams, **15**, 020701 (2012).
10. S. Di Mitri, M. Cornacchia, C. Scafuri and M. Sjoström, *Electron beam optics and trajectory control in the FERMI free electron laser delivery system*, Phys. Rev. Special Topics – Accel. and Beams, **15**, 012802 (2012).
9. S. Di Mitri, *Geometric efficiency of a two-stage fully absorbing collimation system in single-pass linacs*, Phys. Rev. Special Topics – Accel. and Beams, **13**, 052801 (2010).
8. S. Di Mitri, M. Cornacchia, S. Spampinati and S. V. Milton, *Suppression of microbunching instability with magnetic bunch length compression in a linac-based fel*, Phys. Rev. Special

Topics - Accel. and Beams, 13, 010702 (2010).

7. S. Di Mitri et al., *Design and simulation challenges for FERMI@elettra*, Nucl. Instr. and Methods in Phys. Res. A 608 (2009) 19–27.

6. P. Craievich, S. Di Mitri and A. A. Zholents, *Single-bunch emittance preservation in the presence of trajectory jitter for FERMI@elettra-seeded FEL*, Nucl. Instr. and Methods in Phys. Res. A 604 (2009) 457–465.

5. M. Cornacchia, S. Di Mitri, G. Penco and A. A. Zholents, *Formation of Electron Bunches for Harmonic Cascade X-ray Free Electron Lasers*, Phys. Rev. Special Topics - Accel. and Beams, 9, 120701 (2006).

4. W. Barletta et al., *VUV and X-ray free-electron-lasers: the technology and its scientific promise*, Rivista del Nuovo Cimento della Societa Italiana di Fisica, 29 (2006) 6–7.

3. J. Bocchetta et al., *FERMI@Elettra: A Free Electron Laser for EUV and Soft X-Ray radiation*, Synchrotron Radiation News 18N6 (2005) 30–35.

2. V.A. Verzilov, R.J. Bakker, C.J. Bocchetta, P. Craievich, M. Danailov, G. DAuria, G. De Ninno, S. Di Mitri, B. Diviacco, M. Ferianis, *Photo-injector study for the Elettra Linac Fel*, Nuclear Instr. Meth. in Phys. Res., A 528 (2004) 412–415.

1. C.J. Bocchetta et al., *Overview of FERMI@ELETTRA: a proposed ultra-bright coherent X-ray source in Italy*, Nuclear Instr. Meth. in Phys. Res., A 507 (2003) 484–488.

Book Chapters

4. S. Di Mitri, *Coherent Synchrotron Radiation and Microbunching Instability*, in **Proceedings of the CAS-CERN Accelerator School on Free Electron Lasers and Energy Recovery Linacs**, Vol. 1, 381–400, edited by Roger Bailey, published by CERN Yellow Reports series, CERN, Geneva, Switzerland, ISBN 9789290834823 (June 2016).

3. S. Di Mitri, *Bunch Compressors*, in **Proceedings of the CAS-CERN Accelerator School on Free Electron Lasers and Energy Recovery Linacs**, Vol. 1, 363–380, edited by Roger Bailey, published by CERN Yellow Reports series, CERN, Geneva, Switzerland, ISBN 9789290834823 (June 2016).

2. CLIC Collaboration, *Update Baseline for a Staged Compact Linear Collider*, in **CERN-2016-004** edited by Philip N. Burrows et al., published by CERN, Geneva, Switzerland, ISBN 92-9083-432-8 (2016).

1. S. Di Mitri, *Design and Simulation Challenges of a Linac-based Free Electron Laser in the presence of Collective Effects*, in **Free Electron Lasers** edited by Sandor Varro, published by In Tech, 51000 Rijeka, Croatia, ISBN 978-953-51-0279-3 (March 2012).

Editorial Works

S. Chattopadhyay, M. Cornacchia and S. Di Mitri editors, *Nonlinear dynamics and collective effects in particle beam physics*, published by World Scientific Publishing Co. Pte. Ltd., Singapore (2019). ISBN 978-981-3279-60-5

Conceptual Design Reports

MariX Conceptual Design Report (2019), in preparation:
<http://eng.fisica.unimi.it/ecm/home/research/marix>

Elettra 2.0 Conceptual Design Report (2017), available at:
<https://www.elettra.trieste.it/images/Documents/>

FERMI@Elettra Conceptual Design Report (2007), available at:
<https://www.elettra.trieste.it/files/Documents/>

Data

12/07/2019

Luogo

TRIESTE