

## Curriculum vitae

### PERSONAL INFORMATION:

|              |                     |
|--------------|---------------------|
| Family name: | GABRIELLI           |
| First name:  | Emidio              |
| ORCID ID:    | 0000-0002-0637-5124 |
| Nationality: | Italian             |

### EDUCATION:

1991 – PhD in Physics, Dept. of Physics, University of Rome “La Sapienza” (IT)

1986 – Master in Physics, Dept. of Physics, University of Rome “La Sapienza” (IT)

### CURRENT POSITION

since 2018 – Associate Professor, Department of Physics, University of Trieste, Italy

### PREVIOUS POSITIONS

|             |                                                                   |
|-------------|-------------------------------------------------------------------|
| 2012 – 2018 | Assistant Professor, Dept. of Physics, University of Trieste      |
| 2011 – 2014 | Senior Research Scientist, NICPB, Tallinn, Estonia                |
| 2008 – 2011 | Visiting Scientist, TH Division, CERN, Switzerland                |
| 2001 – 2002 | Corresponding Scientific Associate (6 months), TH Division, CERN  |
| 2000 – 2007 | Senior Research Scientist, Helsinki Institute of Physics, Finland |
| 1997 – 2000 | Postdoc, Dept. of Physics, Univ. Autonoma of Madrid, Spain        |
| 1996 – 1997 | Postdoc, Dept. of Physics, Univ. of Notre-Dame, United States     |
| 1993 – 1995 | Postdoc, Dept. of Physics, Univ. of Rome “La Sapienza”, Italy     |
| 1992 – 1993 | Research Fellow, TH-Division, CERN, Switzerland                   |

### SHORT VISITING POSITIONS

|              |                                                                        |
|--------------|------------------------------------------------------------------------|
| 2007 May-Jul | Visiting Researcher at Uppsala University, Dept. of Physics, Sweden    |
| 2007 Oct-Dec | Visiting Prof., Dept. of Physics, Louvain-La-Neuve University, Belgium |
| 1996 Feb-May | Visiting Researcher at Southampton University, Dept. of Physics, UK    |

### ACADEMIC QUALIFICATIONS:

|             |                                                                          |
|-------------|--------------------------------------------------------------------------|
| 2017 - 2028 | Habilitation to Full Professor, Theoretical Physics, sector 02/A2, Italy |
| 2014 - 2018 | Habilitation to Full Professor, Particle Physics, section 29, France     |
| 2008 - 2012 | Habilitation to Full Professor, Particle Physics, section 29, France     |
| 2007        | Habilitation to Lecturer in Finland                                      |

**FELLOWSHIPS AND AWARDS**

2011 – 2014 Principal Investigator, Top Researcher Grant  
 Funding: Estonian Science Foundation, Mobilitas Program  
 Institution: NICPB, Tallinn, Estonia  
 Grant: 544,000 Eur

**SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

2014 – 2021 7 Master Students, Dept. of Physics, Univ. of Trieste  
 2011 – 2014 1 PhD Student, Dept. of Physics, Univ. of Tartu, Estonia  
 2011 – 2014 2 Postdocs, NICPB, Tallinn, Estonia  
 2005 – 2007 1 PhD Student at Helsinki Institute of Physics, Finland

**TEACHING ACTIVITIES**

2023 – 2024 Master – topic: *Complements of Quantum Field Theory*  
 (24 h), Univ. of Trieste, Italy  
 2019 – 2024 Master – topic: *Symmetries and Fundamental Interactions*,  
 3-years, (48 h), Univ. of Trieste, Italy  
 2017 – 2024 Master – topic: *Dynamics of Electro-Weak and Strong Interactions*,  
 6-years (48 h), Univ. of Trieste  
 2018 Master – topic: *Quantum Field Theory*,  
 (48 h), Univ. of Trieste  
 2014 – 2016 Master – topic: *Dynamics of Elementary Particles*,  
 3-years (48 h), Univ. of Trieste  
 2007 PhD – topic: *FCNC processes and CP violating phenomena*,  
 (12 h), Univ. of Louvain-la-Neuve, Belgium  
 2006 PhD – topic: *FCNC processes and CP violating phenomena*,  
 (28 h), Univ. of Helsinki, Finland  
 2005 PhD – topic: *Forward Physics at the LHC and Top Quark Physics*,  
 (10 h), Univ. of Helsinki, Finland  
 2002 – 2003 PhD – topic: *Phenomenology of the Standard Model and beyond*,  
 2-years (30 h), Univ. of Helsinki, Finland  
 1999 PhD – topic: *Phenomenology of the Weak and Strong interactions*,  
 2-years (30 h), Univ. Autonoma of Madrid, Spain

**ORGANIZATION OF SCIENTIFIC MEETINGS**

2018 Organizer of Conf. : PACTS 2018, 18-22 June, Tallinn, Estonia  
 2017 Chair of Conf. : IFAE 2017, 19-21 April, Trieste, Italy  
 2007 Convener of Conf.: ILC Physics in Florence, 12-14 Sept., Florence, Italy

**INSTITUTIONAL RESPONSABILITY**

2014 – 2021 Faculty Member of Master Degree in Physics, Univ. of Trieste

**REVIEWING ACTIVITIES**

since 2017 – Scientific Advisory Board of IFAE  
 since 2021 – Review Panel Member of Rita Levi Montalcini Programme, Italy  
 2003 External assessor for promotions to Associate Professor,  
 University of Galway, Ireland

**– Referee of Scientific Journals**

since 2002 Nuclear Physics B; Physics Letters B  
 – 2004 Physical Review D  
 – 2007 Physical Review Letters  
 – 2012 International Journal of High Energy Physics  
 – 2015 Classical and Quantum Gravity; Journal of Physics G  
 – 2023 The European Physical Journal C; Reports on Progress of Physics  
 – 2024 Nature

**RESEARCH RECORDS:**

I have been working for more than 30 years in the field of theory and phenomenology of high energy physics. I have published so far 100 peer-reviewed articles and about 33 conference/workshop proceedings/books on the topics of quantum field theory, particle and astroparticle physics. According to the InSPIRES database <http://inspirehep.net/>, my  $h$ -index is 40 on all papers. My scientific articles received so far more than about 9000 citations in total, with an average of about 80 citations per peer-reviewed article. Among my works, I have a renowned paper on phenomenological aspects of Supersymmetry that has collected almost 1500 citations, and 9 papers with more than 100 citations.

**INTERNATIONAL PROJECTS UNDER OWN LEADERSHIP:****As Principal Investigator**

- **01.05.2011 – 28.02.2014** Ref. **MTT60** “Search for New Physics beyond the Standard Model and astrophysical implications”. Institution: NICPB, Estonia. Financed by: Estonian Research Council, Mobilitas programme. **Funding: 544,000 EUR**

**As Team Member, coordinator at Trieste University**

- **2017 – 2021** Ref. **TK133** “The Dark Side of the Universe”. Estonian Centre of Excellence. Financed by: European Regional Development Fund
- **2011 – 2015** Ref. **TK120** “Dark Matter in Astro(particle) Physics and Cosmology”, Estonian Centre of Excellence. Financed by: European Regional Development Fund

**As Supervisor**

- **2012 – 2015** Ref. **MJD435** “Researching physics within and beyond the Standard Model”, Estonian Research Council Mobilitas program.

# Full List of Publications

## Peer-reviewed scientific articles

- [1] title: **The production of weak intermediate bosons in e-p reactions**  
journal: Modern Physics Letters **A**, Vol.1,No.8 (1986) 465
- [2] title: **Quark-antiquark pair production via  $\gamma W$  fusion at high energy  $e^+e^-$  colliders**  
co-authors: M. Ciuchini, E. Franco  
journal: Z. Phys. **C 47** (1990) 577
- [3] title: **Renormalization of lattice two fermion operators with improved nearest neighbour action**  
co-authors: G. Heatlie, G. Martinelli, C. Pittori, C.T. Sachrajda  
journal: Nucl. Phys. **B362** (1991),475
- [4] title: **Extended pure Yang Mills gauge theories with scalar and tensor gauge fields**  
journal: Phys. Lett. **B258** (1991) 151
- [5] title: **Four-Fermion Operators with improved nearest-neighbour action**  
co-authors: R. Frezzotti, C. Pittori, G.C. Rossi  
journal: Nucl. Phys. **B373** (1992) 781
- [6] title: **New improved operators: a convenient redefinition**  
co-authors: A. Borrelli, R. Frezzotti, C. Pittori  
journal: Nucl. Phys. **B409** (1993) 392
- [7] title: **The decays  $K^+ \rightarrow e^+\nu_e\gamma$  and  $K^+ \rightarrow \mu^+\nu_\mu\gamma$ , and tensorial coupling in the effective weak hamiltonian**  
journal: Phys. Lett. **B301** (1993) 409
- [8] title: **Instanton effects in the light-quark masses determination from QCD sum rules**  
co-author: P. Nason  
journal: Phys. Lett. **B313** (1993) 430
- [9] title: **Higgs production in association with a vector boson pair at future  $e^+e^-$  colliders**  
co-authors: M. Baillargeon, F. Boudjema, F. Coupyers, B. Mele  
journal: Nucl. Phys. **B424** (1994) 343
- [10] title: **The relevance of the dipole penguin operators in  $\epsilon'/\epsilon$**   
co-authors: S. Bertolini, M. Fabbrichesi  
journal: Phys. Lett. **B327** (1994) 136
- [11] title: **Supersymmetric corrections to  $\epsilon$  and  $\epsilon'/\epsilon$  at the leading order in QCD and QED**  
co-author: G.F. Giudice  
journal: Nucl. Phys. **B433** (1995) 3
- [12] title: **Flavour changing neutral currents and CP violating processes in generalized supersymmetric theories**  
co-authors: A. Masiero, L. Silvestrini  
journal: Phys. Lett.**B374** (1996) 80
- [13] title: **A complete analysis of FCNC and CP constraints in general susy extensions of the standard model**  
co-authors: F. Gabbiani, A. Masiero, L. Silvestrini  
journal: Nucl. Phys. **B477** (1996) 321

- [14] title: **The chromomagnetic dipole operator and the B semileptonic branching ratio**  
co-authors: M. Ciuchini, G.F. Giudice  
journal: Phys. Lett. **B388** (1996) 353
- [15] title:  **$Z\gamma H$  vertex effects in Higgs production at future  $e\gamma$  linear colliders.**  
co-authors: V.A. Ilyin, B. Mele  
journal: Phys. Rev. **D56** (1997) 5945
- [16] title: **Low-energy signals for a minimal gauge mediated model.**  
co-author: U. Sarid  
journal: Phys. Rev. Lett. **79** (1997) 4752
- [17] title: **Imminent phenomenology of a minimal gauge-mediated model.**  
co-author: U. Sarid  
journal: Phys. Rev **D58** (1998) 115003
- [18] title: **Looking for anomalous  $\gamma\gamma H$  and  $Z\gamma H$  couplings effects at future linear colliders.**  
co-authors: V.A. Ilyin, B. Mele  
journal: Phys. Rev **D60** (1999) 113005
- [19] title: **Quenched Supersymmetry**  
co-authors: A. Donini, B. Gavela  
journal: Nucl. Phys. **B546** (1999) 119
- [20] title: **N=1 Supersymmetric Yang-Mills on the lattice at strong coupling**  
co-authors: A. Gonzalez-Arroyo, C. Pena  
journal: Int. J. Mod. Phys. **A15** (2000) 553
- [21] title: **Extended Yang-Mills Theories in Euclidean space with higher spin fields.**  
journal: Annals Phys. **287** (2001) 229
- [22] title: **Model independent constraints on leptoquarks from rare muon and tau lepton processes**  
journal: Phys. Rev. **D62** (2000) 055009
- [23] title: **The  $b \rightarrow s\gamma$  decay in SUSY models with nonuniversal A terms**  
co-authors: S. Khalil, E. Torrente-Lujan  
journal: Nucl. Phys. **B594** (2001) 3
- [24] title: **Initial scales, supersymmetric Dark Matter and variations of neutralino nucleon cross sections**  
co-authors: S. Khalil, C. Munoz, E. Torrente-Lujan  
journal: Phys. Rev. **D63** (2001) 025008
- [25] title: **Determination of the string scale in D-brane scenarios and Dark Matter implications**  
co-authors: D.G. Cerdeno, S. Khalil, C. Munoz, E. Torrente-Lujan  
journal: Nucl. Phys. **B603** (2001) 231
- [26] title: **Muon anomalous magnetic moment in supersymmetric models with intermediate scale**  
co-authors: D.G. Cerdeno, S. Khalil, C. Muñoz, E. Torrente-Lujan  
journal: Phys. Rev. **D64** (2001) 093012
- [27] title: **g-2 of the muon in SUSY models with Gauge multiplets in the Bulk of Extra-dimensions**  
co-authors: K. Enqvist, K. Huitu  
journal: Phys. Lett. **B512** (2001) 107

- [28] title: **Vacuum stability bounds in anomaly and gaugino mediated SUSY breaking models**  
co-authors: K. Huitu, S. Roy  
journal: Phys. Rev. **D65** (2002) 075005
- [29] title: **On the  $B \rightarrow X_s \rightarrow l^+ l^-$  decays in general supersymmetric models**  
co-author: S. Khalil  
journal: Phys. Lett. **B530** (2002) 133
- [30] title: **Gravitational decays of heavy particles in large extra dimensions**  
co-author: B. Mele  
journal: Nucl. Phys. **B647** (2002) 319
- [31] title: **Constraining supersymmetric models from  $B_d - \bar{B}_d$  mixing and the  $B \rightarrow J/\Psi K_S$  asymmetry**  
co-author: S. Khalil  
journal: Phys. Rev. **D67** (2003) 015008
- [32] title: **Virtual graviton exchanges at the Z pole in large extra dimensions**  
co-authors: A. Datta, B. Mele  
journal: Phys. Lett. **B552** (2003) 237
- [33] title: **Large extra dimension effects in Higgs boson production at linear colliders and Higgs factories**  
co-authors: A. Datta, B. Mele  
journal: JHEP **0310:003** (2003)
- [34] title: **Neutralino Nucleon cross section and charge and color breaking constraints**  
co-authors: D.G. Cerdeño, M.E. Gomez, C. Muñoz, E. Torrente-Lujan  
journal: JHEP **0306:030** (2003)
- [35] title: **Chargino contribution to the CP asymmetry in  $B \rightarrow \Phi K_S$  decay**  
co-authors: D. Chakraverty, K. Huitu, S. Khalil  
journal: Phys. Rev. **D68** (2003) 095004
- [36] title: **Violation of angular momentum selection rules in quantum gravity**  
co-authors: A. Datta, B. Mele  
journal: Phys. Lett. **B579** (2004) 189
- [37] title: **Comparative study of CP asymmetries in supersymmetric models**  
co-authors: K. Huitu, S. Khalil  
journal: Nucl. Phys. **B710** (2005) 139
- [38] title: **Light mesons and muon radiative decays and photon polarization asymmetry**  
co-author: Luca Trentadue  
journal: Nucl. Phys. **B792** (2008) 48
- [39] title: **Photon propagation in magnetic and electric fields with scalar/pseudoscalar couplings: a new look**  
co-authors: K. Huitu, S. Roy  
journal: Phys. Rev. **D74** (2006) 073002
- [40] title: **Phenomenological viability of neutralino dark matter in the Next-to-Minimal Supersymmetric Standard Model**  
co-authors: D.G. Cerdeño, D.E. López-Fogliani, C. Muñoz, A.M. Teixeira  
journal: JCAP06 (2007) 008
- [41] title: **Higgs boson production in association with a photon in vector boson fusion at LHC**  
co-authors: F. Maltoni, B. Mele, M. Moretti, F. Piccinini, R. Pittau,  
journal: Nucl. Phys. **B781** (2007) 64

- [42] title: **Higgs boson plus photon production at the LHC: a clean probe of the b-quark parton densities**  
co-authors: B. Mele, J. Rathsmann  
journal: Phys. Rev. **D77** (2008) 015007
- [43] title: **On the dynamical breaking of chiral symmetry: A New mechanism**  
journal: Phys. Rev. **D77** (2008) 055020
- [44] title: **Flavor Changing Fermion-Graviton Vertices**  
co-authors: G. Degrassi, L. Trentadue  
journal: Phys. Rev. **D79** (2009) 053004
- [45] title: **Testing Effective Yukawa Couplings in Higgs Searches at the Tevatron and LHC**  
co-author: B. Mele  
journal: Phys. Rev. **D82** (2010) 113014
- [46] title: **Effective Yukawa couplings and flavor-changing Higgs boson decays at linear colliders**  
co-author: B. Mele  
journal: Phys. Rev. **D83** (2011) 073009
- [47] title: **Effective axial-vector coupling of gluon as an explanation to the top quark asymmetry**  
co-author: M. Raidal  
journal: Phys. Rev. **D84** (2011) 054017
- [48] title: **Implications of the effective axial-vector coupling of gluon on top-quark charge asymmetry at the LHC**  
co-authors: A. Racioppi, M. Raidal  
journal: Phys. Rev. **D85** (2012) 074021
- [49] title: **Has a fermiophobic Higgs boson been detected at the LHC ?**  
co-authors: B. Mele, M. Raidal  
journal: Phys. Lett. **B716** (2012) 322
- [50] title: **Fermiophobic Higgs boson and supersymmetry**  
co-authors: K. Kannike, B. Mele, A. Racioppi, M. Raidal  
journal: Phys. Rev. **D86** (2012) 055014
- [51] title: **Single top and Higgs associated production as a probe of the Htt coupling sign at**  
co-authors: S. Biswas, B. Mele  
journal: JHEP **1301** (2013) 088
- [52] title: **Implications of effective axial-vector coupling of gluon for  $t\bar{t}$  spin polarizations at the LHC**  
co-authors: A. Racioppi, M. Raidal, H. Veermae  
journal: Phys. Rev. **D87** (2013) 054001
- [53] title: **One loop Standard Model corrections to flavor diagonal fermion-graviton vertices**  
co-authors: C. Coriano, L. Delle Rose, L. Trentadue  
journal: Phys. Rev. **D87** (2013) 054020
- [54] title: **Mass Corrections to Flavor-Changing Fermion-Graviton Vertices in the Standard Model**  
co-authors: C. Coriano, L. Delle Rose, L. Trentadue  
journal: Phys. Rev. **D88** (2013) 085008
- [55] title: **Direct constraints on the top-Higgs coupling from the 8 TeV LHC data**  
co-authors: S. Biswas, F. Margaroli, B. Mele  
journal: JHEP **07** (2013) 073

- [56] title: **Towards completing the Standard Model: Vacuum Stability, EWSB and Dark Matter**  
co-authors: M. Heikinheimo, K. Kannike, A. Racioppi, M. Raidal, C. Spethmann  
journal: Phys Rev **D89** (2014) 015017
- [57] title: **Exponentially spread dynamical Yukawa couplings from non-perturbative chiral symmetry breaking in the dark sector**  
co-author: M. Raidal  
journal: Phys Rev **D89** (2014) 015008
- [58] title: **Anomalous Higgs-boson coupling effects in HWW production at the LHC**  
co-authors: M. Heikinheimo, L. Marzola, B. Mele, C. Spethmann, H. Veermae  
journal: Phys Rev **D89** (2014) 053012
- [59] title: **Fermion scattering in a gravitational background: Electroweak corrections and Flavour transitions**  
co-authors: C. Coriano, L. Delle Rose, L. Trentadue  
journal: JHEP **1403** (2014) 136
- [60] title: **Enhancing the  $t\bar{t}H$  signal through top-quark spin polarization effects at the LHC**  
co-authors: S. Biswas, R. Frederix, B. Mele  
journal: JHEP **1407** (2014) 020
- [61] title: **Dark photons and resonant monophoton signatures in Higgs boson decays at the LHC**  
co-authors: M. Heikinheimo, B. Mele, M. Raidal  
journal: Phys. Rev. D **90** (2014) 055032
- [62] title: **Higgs-boson production in association with a Dark Photon in  $e^-e^-$  collisions**  
co-authors: S. Biswas, M. Heikinheimo, B. Mele  
journal: JHEP **1506** (2015) 102
- [63] title: **Dark matter and spin-1 milli-charged particles**  
co-authors: L. Marzola, M. Raidal, H. Veermäe  
journal: JHEP **1508** (2015) 150
- [64] title: **A SUSY Inspired Simplified Model for the 750 GeV Diphoton Excess**  
co-authors: K. Kannike, B. Mele, M. Raidal, C. Spethmann, H. Veermäe  
journal: Phys. Lett. **B756** (2016) 36
- [65] title: **Asking for an extra photon in Higgs production at the LHC and beyond**  
co-authors: B. Mele, F. Piccinini, R. Pittau  
journal: JHEP **1607** (2016) 003
- [66] title: **Dark-Photon searches via Higgs-boson production at the LHC**  
co-authors: S. Biswas, M. Heikinheimo, B. Mele  
journal: Phys. Rev. D **93** (2016) 093011
- [67] title: **Polarization observables for millicharged particles in photon collisions**  
co-authors: L. Marzola, E. Milotti, H. Veermäe  
journal: Phys. Rev. D **94** (2016) 095014, Erratum: Phys.Rev. D **95** (2017) 119903
- [68] title: **FCNC decays of standard model fermions into a dark photon**  
co-authors: B. Mele, M. Raidal, E. Venturini  
journal: Phys. Rev. D **94** (2016) 115013
- [69] title: **Radiative Yukawa Couplings in the Simplest Left-Right Symmetric Model**  
co-authors: L. Marzola, M. Raidal  
journal: Phys. Rev. D **95** (2017) 035005

- [70] title: **Dark-photon searches via  $ZH$  production at  $e^+e^-$  colliders**  
co-authors: S. Biswas, M. Heikinheimo, B. Mele  
journal: Phys. Rev. D **96** (2017) 055012
- [71] title: **Hunting down massless dark photons in kaon physics**  
co-authors: M. Fabbrichesi, B. Mele  
journal: Phys. Rev. Lett. **119** (2017) 031801
- [72] title: **Z boson decay into light and darkness**  
co-authors: M. Fabbrichesi, B. Mele  
journal: Phys. Rev. Lett. **120** (2018) 171803
- [73] title: **Neutral Hadrons Disappearing into the Darkness**  
co-authors: D. Balducci, M. Fabbrichesi  
journal: Phys. Rev. **D98** (2018) 035049
- [74] title: **Left-right Supersymmetry as the origin of flavor structure**  
co-authors: S. Fraser, C. Marzo, L. Marzola, M. Raidal  
journal: Phys. Rev. D **100** (2019) 115002
- [75] title: **Probing axion-like particle portals at future  $e^+e^-$  colliders**  
co-authors: S. Biswas, A. Chatterjee, B. Mele  
journal: Phys. Rev. D **100** (2019) 115040
- [76] title: **Magnetic-dipole corrections to  $R_K$  and  $R_K^*$  in the Standard Model and Dark Photon scenarios**  
co-authors: M. Palmiotta  
journal: JHEP **10** (2020) 145
- [77] title: **Dark-sector physics in the search for the rare decays  $K^+ \rightarrow \pi^+ \bar{\nu} \nu$  and  $K_L \rightarrow \pi^0 \bar{\nu} \nu$**   
co-authors: M. Fabbrichesi  
journal: Eur. Phys. J. C **80** (2020) 6, 532
- [78] title: **Dark origin of the quark flavor hierarchy and mixing**  
co-authors: C. Marzo, L. Marzola, K. M  rsepp  
journal: Phys. Rev. D **101** (2020) 075019
- [79] title: **Untangling the spin of a dark boson in  $Z$  decays**  
co-authors: A. Comelato  
journal: Phys. Rev. D **102** (2020) 015028
- [80] title: **Z-boson decays into an invisible dark photon at the LHC, HL-LHC and future lepton colliders**  
co-authors: M. Cobal, C. De Dominicis, M. Fabbrichesi, J. Magro, B. Mele, G. Panizzo  
journal: Phys. Rev. D **102** (2020) 035027
- [81] title: **Searching for the dark sector in two-body antimuon decay with the polarization of monochromatic positrons**  
co-authors: M. Fabbrichesi  
journal : Phys. Rev. D **104** (2021) 015039
- [82] title: **Bounds on charged-lepton flavor violations via resonant scattering**  
co-authors: B. Mele, R. Onofrio  
journal : Phys. Lett. **B 822** (2021) 136656
- [83] title: **Vacuum stability with radiative Yukawa couplings**  
co-authors: L. Marzola, K. M  rsepp, R. OuyangB  
journal: JHEP **01** (2022) 142

- [84] title: **Monochromatic single photon events at the muon collider**  
co-authors: M. Casarsa, M. Fabbrichesi  
journal: Phys. Rev. D 105 (2022) 7, 7
- [85] title: **Dark Photon Searches via Higgs Boson Production at the LHC and Beyond**  
co-authors: Sanjoy Biswas, B. Mele  
journal: Symmetry 14 (2022) 8, 1522
- [86] title: **Constraining new physics in entangled two-qubit systems: top-quark, tau-lepton and photon pairs**  
co-authors: M. Fabbrichesi, R. Floreanini  
journal: Eur. Phys. J. C 83 (2023) 2, 162
- [87] title: **Bell inequalities and quantum entanglement in weak gauge boson production at the LHC and future colliders**  
co-authors: M. Fabbrichesi, R. Floreanini, L. Marzola  
journal: Eur.Phys.J.C 83 (2023) 9, 823
- [88] title: **Stringent bounds on HWW and HZZ anomalous couplings with quantum tomography at the LHC**  
co-authors: M. Fabbrichesi, R. Floreanini, L. Marzola  
journal: JHEP 09 (2023) 195
- [89] title: **Bell inequality is violated in  $B^0 \rightarrow J/\Psi K^*(892)^0$  decays**  
co-authors: M. Fabbrichesi, R. Floreanini, L. Marzola  
journal: Phys.Rev.D 109 (2024) 3, L031104
- [90] title: **Explaining the  $B^+ \rightarrow K^+ \nu \bar{\nu}$  excess via a massless dark photon**  
co-authors: L. Marzola, K. Mürsepp, M. Raidal  
journal: Eur. Phys. J. C 84 (2024) 5, 460
- [91] title: **Quantum entanglement and Bell inequality violation at colliders**  
co-authors: A. Barr, M. Fabbrichesi, R. Floreanini, L. Marzola  
journal: Prog. Part. Nucl. Phys. 139 (2024) 104134
- [92] title: **Bell inequality is violated in charmonium decays**  
co-authors: M. Fabbrichesi, R. Floreanini, L. Marzola  
journal: Phys. Rev. D 110 (2024) 5, 053008  
e-Print: 2406.17772 [hep-ph]
- [93] title: **Entanglement and Bell inequality violation in  $B \rightarrow \phi\phi$  decays**  
co-author: L. Marzola  
journal: Symmetry 2024, 16(8), 1036

## Recent articles under peer-review

- [1a] title: **Testing the CKM unitarity at high energy via the  $W^+W^-$  production at the LHC and future colliders**  
co-authors: L. Marzola, K. Mürsepp  
e-Print: 2405.14585 [hep-ph]

## Books

- [1b] title: **The Physics of the Dark Photon - A Primer**  
 co-authors: M. Fabbrichesi, G. Lanfranchi  
 SpringerBriefs in Physics 2020, Springer  
 DOI: 10.1007/978-3-030-62519-1  
 e-Print: 2005.01515 [hep-ph]

## Conference proceedings, Workshops, and Working groups

- [1c] title: **Single weak gauge boson production at CLIC**  
 conferenza: Workshop on Physics at Future Accelerators, 7-13 Jan 1987. *La Thuile, Italy and Geneva, Switzerland*  
 journal: CERN-87-07 Vol. II, 1
- [2c] title: **Improved computation in lattice QCD**  
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