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ALFREDO LEONARDO URBANO Curriculum Vitae

Place: Trieste (Italy)

Date: 21 February 2020

Copia ai fini della pubblicazione, conforme a quanto prescritto dall'art. 4 del Codice in materia di protezione dei dati personali e dall'art. 26 del D. Lgs. 14 Marzo 2013, n. 33.

Part I – General Information

Full Name	Alfredo Leonardo Urbano
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Part II – Education

Type	Year	Institution	Notes
High-school diploma	2002	Liceo Scientifico "Galileo Galilei," Manduria (Taranto, Italy).	Final grade: 96/100
University graduation	2005	Università del Salento (Lecce, Italy)	Laura triennale in Fisica (110/110 cum laude)
University graduation	2007	Università del Salento (Lecce, Italy)	Laurea specialistica in Fisica (110/110 cum laude)
Ph.D.	2011	Università del Salento (Lecce, Italy)	Ph.D. in Physics

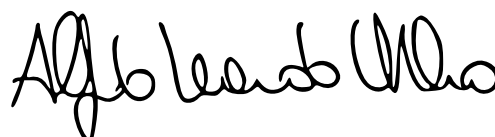
Part III – Appointments

IIIA – Academic Appointments

Start	End	Institution	Position
2011	2012	ENS Laboratoire de Physique Théorique de l'Ecole Normale Supérieure Paris (France)	Post-doctoral position Research activity: Beyond the Standard Model of particle physics
2012	2015	SISSA International School for Advanced Studies Trieste (Italy)	Post-doctoral position Research activity: Beyond the Standard Model of particle physics, cosmic-ray physics
2015	2018	CERN Theoretical Physics Department Geneve (Switzerland)	Post-doctoral position (CERN fellow) Research activity: Beyond the Standard Model of particle physics, cosmology, theoretical particle physics

IIIB – Other Appointments

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Start	End	Institution	Position
October 2017	Ongoing	INFN Istituto Nazionale di Fisica Nucleare Sezione di Trieste Trieste (Italy)	Ricercatore III livello a tempo indeterminato

Part IV – Teaching experience

Year	Institution	Lecture/Course
2018	IFIC Instituto de Fisica Corpuscular Valencia (Spain)	Ph.D. course (6h) Title: “A crash course in inflation: theoretical aspects and observable phenomena”
2018	Petnica summer institute Valjevo (Serbia)	Ph.D. summer school (6h) Title: “The Standard Model of particle physics”
2016	ESHEP 2016 The 2016 European School of High-Energy Physics Skeikampen (Norway)	Ph.D. school Discussion leader

Part V - Society memberships, Awards and Honors

Year	Title
2011	“Angelo Della Riccia” fellowship della Fondazione italiana “Angelo Della Riccia” 16 kE spent during the Ph.D. for a period of study abroad Host Institution: IFAE, Institut de Fisica d’Altes Energies, Barcelona (Spain).

Part VI - Funding Information [grants as PI-principal investigator, I-investigator or personnel of a research unit]

Year	Title/functions	Funding Agency/Program	Grant value
2018	PI	INFN	20000 euro
2017	Personnel of the research unit 4 (Investigator: dr. Michele Redi) PI of the project: prof. Roberto Contino.	MIUR/PRIN Codice: 2017FMJFMW Title: “New Avenues in Strong Dynamics: from the Early Universe to the Lab.”	Responsabile di 30000 euro

Part VII – Research Activities

Keywords	Brief Description
Beyond the Standard Model of particle physics	Research activity focused on phenomenological aspects of various extensions of the Standard Model of particle physics that address—and attempt to solve—its naturalness problem. The phenomenology of these models ranges from collider physics to astro-particle signals.

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Astroparticle and Cosmology	<p>Research activity focused on dark matter physics. Understanding the nature of dark matter is one of the great mystery still unsolved in modern physics.</p> <p>On the particle-physics side, the research is focused on the construction of extensions of the Standard Model of particle physics that include a viable dark matter candidate.</p> <p>On the observational side, the research is focused on the possibility to detect dark matter via its interactions with Standard Model particles.</p>
Formal aspects of quantum field theories with gravity	<p>Research activity focused on the role of gravity in the context of quantum field theories.</p> <p>From the point of view of quantum field theory, General Relativity is an effective field theory that breaks down at the Planck scale thus requiring the formulation of a valid ultraviolet completion.</p> <p>In this context, the research activity is focused on the possibility to understand the properties of such ultraviolet completion with possible testable implications.</p>

Part VIII – Summary of Scientific Achievements

Document type	Number	Data Base	Start	End
Published articles	47	Web Of Science (WoS)	2009	2019

Total Impact Factor (IF)	260,436
Average IF	5,54
Total Citations WoS database	1329
Total Citations (without self-citations) WoS database	1261
Average Citations per Product	28,28
Hirsch (H) index	22
Normalized H index*	1,83

*H index divided by the academic seniority (time span from graduation).

Part IX– Selected Publications

List of the publications selected for the evaluation (max 12).

For each publication report title, authors, reference data, journal IF (according to the year of publication), citations (according to the WoS database), press/media release (if any).

- Title:** “Room for New Physics in the Rayleigh-Jeans Tail of the Cosmic Microwave Background”
Authors: M. Pospelov, J. Pradler, J. T. Ruderman and A. Urbano
Reference data: Phys. Rev. Lett. **121** (2018) no. 3, 031103 [doi:10.1103/PhysRevLett.121.031103]
Journal IF: 9.227
Citations: 34
Additional info: Chosen as PRL Editors' Suggestion;
<https://aps.altmetric.com/details/34579358/news>

- Title:** “Clockwork/linear dilaton: structure and phenomenology”

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Authors: G. Giudice, Y. Kats, M. McCullough, R. Torre, A. Urbano
Reference data: JHEP **06** (2018), 009 [doi:10.1007/JHEP06(2018)009]
Journal IF: 5.833
Citations: 16

- 3) **Title:** “Flavour anomalies and the R-K* measurement”
Authors: G. D’Amico, M. Nardecchia, P. Panci, F. Sannino, A. Strumia, R. Torre, A. Urbano
Reference data: JHEP **09** (2017), 010 [doi:10.1007/JHEP09(2017)010]
Journal IF: 5.541
Citations: 47
- 4) **Title:** “Wormholes and masses for Goldstone bosons”
Authors: R. Alonso, A. Urbano
Reference data: JHEP **02** (2019), 136 [doi:10.1007/JHEP02(2019)136]
Journal IF: 5.833
Citations: 7:
- 5) **Title:** “Diffuse Cosmic Rays Shining in the Galactic center: A novel Interpretation of HESS and Fermi-LAT gamma-Ray data”
Authors: D. Gaggero, D. Grasso, A. Marinelli, M. Taoso, A. Urbano
Reference data: Phys. Rev. Lett. **119** (2017) no.3, 031101 [doi:10.1103/PhysRevLett.119.031101]
Journal IF: 8.839
Citations: 21
Additional info: <https://aps.altmetric.com/details/16206084/news>
- 6) **Title:** “Hunting for dark particles with gravitational waves”
Authors: G. Giudice, M. McCullough, A. Urbano
Reference data: JCAP **10** (2016), 001 [doi:10.1088/1475-7516/2016/10/001]
Journal IF: 4.734
Citations: 36
- 7) **Title:** “Towards a realistic astrophysical interpretation of the gamma-ray Galactic center excess”
Authors: D. Gaggero, M. Taoso, A. Urbano, M. Valli, P. Ullio
Reference data: JCAP **12** (2015), 056 [doi:10.1088/1475-7516-2015-12-056]
Journal IF: 5.634
Citations: 40
- 8) **Title:** “Cosmic-ray sky points to radial gradients in cosmic-ray transport”
Authors: D. Gaggero, A. Urbano, M. Valli, P. Ullio
Reference data: Phys. Rev. D **91** (2015) no. 8, 083012 [doi:10.1103/PhysRevD.91.083012]
Journal IF: 4.506
Citations: 44
- 9) **Title:** “Higgs at last”
Authors: A. Falkowski, F. Riva, A. Urbano
Reference data: JHEP **11** (2013), 111 [doi:10.1007/JHEP11(2013)111]
Journal IF: 6.220
Citations: 126
- 10) **Title:** “Composite scalar dark matter”
Authors: M. Frigerio, A. Pomarol, F. Riva, A. Urbano
Reference data: JHEP **07** (2012), 015 [doi:10.1007/JHEP07(2012)015]

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Journal IF: 5.618

Citations: 86

11) **Title:** “What if the Higgs couplings to W and Z bosons are larger than in the Standard Model”

Authors: A. Falkowski, S. Rychkov, A. Urbano

Reference data: JHEP **04** (2012), 073 [doi:10.1007/JHEP04(2012)073]

Journal IF: 5.618

Citations: 50

12) **Title:** “Weak corrections are relevant for dark matter indirect detection”

Authors: P. Ciafaloni, D. Comelli, A. Riotto, F. Sala, A. Strumia, A. Urbano

Reference data: JCAP **03** (2011), 019 [doi:10.1088/1475-7516/2011/03/019]

Journal IF: 5.723

Citations: 180

Part X – Selected talks at conferences and workshops

- 1) **24th Rencontres Itzykson - Effective Field Theory in Cosmology, Gravitation and Particle Physics;** June 2019 IPHT CEA-Saclay (Paris, France). Invited talk in plenary session: “On Standard Model amplitudes in the presence of gravity.” Slides and video available at: <https://www.youtube.com/watch?v=mf8QLicZOdM&feature=youtu.be>
- 2) **Zurich Phenomenology Workshop 2019 - A new look on dark matter;** January 2019 (Zurich, Switzerland). Invited talk in plenary sessions: “Constraints from cosmology.” Slides available at: https://indico.cern.ch/event/773863/contributions/3248600/attachments/1776534/2888478/2-ZPW2019_Urbano_short.pdf
- 3) **Fisica delle Particelle - Verso la nuova strategia europea;** September 2018 (Rome, Italy). Invited talk “Prospettive per le particelle da astro-particelle e cosmologia.” Slides available at: https://agenda.infn.it/event/15968/contributions/32027/attachments/22608/25717/02_Urbano.pdf
- 4) **DESY theory workshop 2019 - Particle physics challenges;** September 2018 (Hamburg, Germany). Invited talk in plenary session: “Gravitational waves and particle physics.” Slides available at: <https://indico.desy.de/indico/event/20110/session/2/contribution/88/material/slides/0.pdf>
- 5) **SEWM 2018 - Strong and ElectroWeak Matter Conference;** June 2018 (Barcelona, Spain). Invited talk in plenary session: “Axions and General Relativity.”
- 6) **B-physics anomalies - Instant workshop on B meson anomalies;** July 2017 (CERN, Geneva, Switzerland). Invited talk: “What do we learn from fits.” Slides available at: https://indico.cern.ch/event/633880/contributions/2587007/attachments/1462319/2261520/FlavourAnomaly_Urbano.pdf
- 7) **Gravitational waves and cosmology - 3rd eLISA cosmology working group workshop;** October 2016 (Hamburg, Germany). Invited talk in plenary session: “Hunting for Dark Particles with Gravitational Waves.” Slides available at: <https://indico.desy.de/indico/event/15039/session/2/contribution/2/material/slides/0.pdf>
- 8) **ICRC 2015 - 34th International Cosmic Ray Conference;** August 2015 (The Hague, Netherlands). Invited talk in parallel session: “Interpreting the GeV gamma-ray excess in terms of non-standard cosmic-ray diffusion models.”
- 9) **LTS1 2014 - Workshop on the long term strategy of INFN-CSN1;** May 2014 (Isola d’Elba, Italy). Invited talk in plenary session: “Dark matter: past, present and future perspectives.” Slides available at: https://agenda.infn.it/event/7567/contributions/68646/subcontributions/2008/attachments/49676/58732/LTS1_Urbano.pdf

Part XI – Coordination assignments

Local coordinator of the INFN group IV, sezione di Trieste (9 July 2019 - 9 July 2022).

Part XII – Other activities

IFAE 2017, XVI Incontri di Fisica delle Alte Energie; April 2017, Trieste (Italy). Convener della sessione Frontiera Energia.

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EPS-HEP 2017, The European Physical Society Conference on High-Energy Physics; July 2017 (Venice, Italy). Co-convener of the dark matter session.

LFC17 - Old and New Strong Interactions from LHC to Future Colliders; September 2017 (ECT*, Trento, Italy). Co-convener of the session on dark matter and cosmic-ray physics.

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