

Name Dafne Guetta

## CURRICULUM VITAE AND LIST OF PUBLICATIONS

### Personal Details

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Name: Dafne Guetta

Date and place of birth: 22/03/1970 Florence, Italy

Date of immigration: July 2011

Regular military service (dates) NO

Telephone number at work: 0542850306

### Education

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#### **Undergraduate and Graduate Studies**

Ph.D./ D.Sc. / M.D. 1995-1998- University of Bologna, Department Physics

Name of advisor: Prof. Ettore Remiddi

Title of thesis: Study of R-parity and CP violation in B decays

M.A. / M.Sc. - 1992-1994 - University of Florence- Department of Physics

Name of advisor: Prof Roberto Casalbuoni

Title of thesis: Study of the anomalous couplings at NLC with polarized beams

B.A. / B.Sc. - 1989-1992 - University of Florence- Department of Physics

#### **Post-Doctoral Studies**

2003-2004 Postdoctoral Fellow – Department of Astrophysics, JILA, Boulder, Colorado, USA, Supervisor: Prof. Mitch Begelman

2001-2003 Postdoctoral Fellow, Marie Curie ITN – Department of Astrophysics, Hebrew University, Jerusalem, Israel, Supervisor: Prof. Tsvi Piran

2000-2001 Postdoctoral Fellow – Department of Astrophysics University of Florence, Italy  
Supervisor: Prof. Franco Pacini

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1982

1998-2000 Postdoctoral Fellow – Department of Particle Physics, Technion, Israel,  
Supervisor: Prof. Paul Singer

### **Academic Ranks and Tenure in Institutes of Higher Education**

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(in descending chronological order, including sabbatical leave)

Years: 2024-present

Head of Ariel University International Affairs

Years: 2024-present

Rank/Title/Function: Full Professor

Institution: Ariel University

Years: 2021-2024

Rank/Title/Function: Associate Professor

Institution: Ariel University

Years: 2014-2021

Rank/Title/Function: Associate Professor

University/Institution: ORT-Braude College

Years: 2011-2013

Rank/Title/Function: Senior Lecturer

University/Institution: ORT-Braude College

Years: 2004-2011

Rank/Title/Function: Tenure Permanent Position

University/Institution: Astronomical Observatory of Rome

### **Professional Activities**

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#### **Referee of scientific or professional journal**

Years 2000-Present.

Name of journal: Astrophysical Journal, Astronomy and Astrophysics, Physical Review Letters, Journal of Astroparticle, Monthly Notices of the Royal Astronomical Society

#### **Membership in professional/scientific societies**

Years 2022 Official Member of the Scientific Organization Committee of the Israeli Space Agency

Years 2022-2030 Official member of the LIGO and Virgo Gravitational Waves detectors collaboration. As a member of the collaboration, I'll have free access to all the data.

Years 2021-Present Member of the THESEUS European project.

Years 2020-Present Member of the Israeli Project ULTRASAT led by the principal investigator, Prof. Eli Waxman.

Years: 2014-2016 – Representing ORT-Braude in the Israeli Physics Society

### **Conference Organization**

2024 Organizer of a parallel session at the Marcell Grossmann International Conference, July 7-12/2024, Pescara, Italy

2022-2023 Scientific Organizer of the International conference on “Black Hole, from theory to observations”, to be held the 1th of February 2023, at the David Intercontinental, Tel Aviv

2022-2023 Scientific Organizer of the International conference on “The first Israeli-Korea astronomy workshop”, to be held the 29-30 of January 2023, at Ariel University

2018 Organizer of the Research conference of ORT-Braude at Pastoral Hotel, Israel 2016

Organizer of the Israeli Physics Society Conference in Tel Aviv, Israel

2014 Organizer of the Italian-Israel Astrophysics Conference in Akko, Israel. On behalf of the Italian Embassy.

### **Educational activities**

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#### **Courses taught in Recent Years**

2023-present Physics in English

2022-present Astrophysics for third year in Physics- Ariel University

2021- present Mechanics for Industrial Engineers-Undergraduate- Ariel University

2021-present Mechanics for Civil Engineers- Undergraduate- Ariel University

2021-present Mechanics for Electrical Engineers- Undergraduate- Ariel University

2020-2021 Modern Physics for Mechanical Engineering in English (it was taught for the first time in English)- Undergraduate- ORT-Braude

2011-2020 Mechanics for Biotechnology Engineering - Undergraduate- ORT-Braude

2011-2020 Mechanics for Computer Science Engineering- Undergraduate- ORT-Braude

2011-2020 Mechanics for Mechanical Engineering- Undergraduate- ORT-Braude

2011-2021 Mechanincs for Engineering and Menagement-Undergaduate-ORT-Braude

#### **Supervision of Research Sudents**

2024-2028 Principal supervisor of PhD of Asaf Cohen, University of Ariel

2024 2028 Principal supervisor of PhD of Joseph Onegbu, University of Ariel

2022-2026 Principal supervisor of PhD of Bisi Ogunwale, University of Ariel  
2022-2026 Principal supervisor of PhD of Aurora Lagella, University Federico II, Napoli  
Italy  
2022-2026 Principal supervisor of PhD of Silvia Gagliardini, University of Ariel  
2022-2026 Principal supervisor of PhD of Sandhya Menon, University of Ariel  
2022-2024 Supervisor of the Master of Asaf Cohen, Ariel University  
2022-2024 Supervisor of the Master of Joseph Onegbu, Ariel University  
2020-2022, Silvia Gagliardini, Master, University La Sapienza, Rome, Italy, with Prof.  
Antonio Capone  
2018-2020, Michela Fasano, Master, University La Sapienza, Rome, Italy, with Prof.  
Antonio Capone  
2017-2019, Lee Yacobi, Co-supervisor of the PhD, Technion, Israel, with Prof. Ehud  
Behar

### **Awards, Citations, Honors, Fellowships**

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#### **Honors, Citation Awards (including during studies)**

2020 – ORT-Braude- Excellence Award for activity in research and teaching at Braude  
(25000 Shekels)  
2019 – ORT-Braude- Excellence Award for activity in research and teaching at Braude  
(25000 Shekels)  
2017 – ORT-Braude- Excellence Award for research activity (20000 Shekels)  
2014 – ORT-Braude- Excellence Award for research activity (20000 Shekels)  
2010 – Vigevani Foundation-Iori prize in Physics (5000 euro)  
1997 – Italian Physics Society - Special prize for the research in theoretical Physics

#### **Fellowships (e.g. Fullbright)**

2002-2003- Marie Curie - 35000 (\$)/yr -Postdoctoral Fellow at the Hebrew University  
1995-1998 Fellowship from Bologna University, Italy, to support my PhD studies.  
1995-1998 Fellowship from the Italian Embassy in Israel to perform part my PhD research  
activity in Israel at the Weizmann Institute, with Prof. Yosef Nir.  
1991-1995 Fellowship of the Florence University, Italy, for Excellence in Studies. The  
Fellowship covered all the expenses during the University period in Physics studies.

## Scientific Publications

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### Citation Index

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**H-index** (ISI / Google Scholar): **37/45**

**Total number of citations of all articles** (ISI / Google Scholar): **3973/7095**

**Total number of citations without self-citations** (ISI / Google Scholar): **3808 (ISI)**

### Authored books

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#### Books Chapter: Conference proceedings

1. Zagarelli A., Fasamo M., Celli S., **Guetta D.**, Capone A. and Di Palma, I. "Neutrino predictions from choked Gamma-Ray Bursts and comparison with the observed cosmic diffuse neutrino flux", RICAP-22, 8th Roma International Conference on Astroparticle Physics, Roma, Italy, Edited by Capone, A.; De Vincenzi, M.; Morselli, A.; EPJ Web of Conferences, Volume 280, id.09005
2. \***Guetta D.**, Gagliardini S., Celli S., Zagarelli A., Capone, A. and Di Palma, I., "TeV emission from Gamma Ray Bursts, checking the hadronic model" RICAP-22, 8th Roma International Conference on Astroparticle Physics, Roma, Italy, Edited by Capone, A.; De Vincenzi, M.; Morselli, A.; EPJ Web of Conferences, Volume 280, id.01005
3. Di Palma I., Celli S., Zagarelli A., Capone A., Fasamo M., **Guetta D.**, 2021, "Neutrino predictions from choked GRBs and comparison with the observed cosmic neutrino flux, proceedings of Science", 37th International Cosmic Ray Conference. 12-23 July 2021. Berlin, Germany - Online, published March 18, 2022. Online at <https://pos.sissa.it/cgi-bin/reader/conf.cgi?confid=395>, id.1223
4. \***Guetta D.** 2019, Multimessengers probes of high energy sources, EPJ Web of Conferences, Volume 209, 01036
5. \***Guetta D.**, 2016, Neutrinos from Gamma Ray Bursts in the IceCube and ARA Era, EPJ Web of Conferences, Volume 121, 05001
6. \***Guetta D.**, 2015, Review, Neutrinos from Gamma Ray Bursts in the IceCube and ARA Era, Journal of High Energy Astrophysics, Volume 7, pg. 90-94 **IF: 4.09, CR 22/68, Q2**
7. Linzon, Y, Mahajne, S. **Guetta, D.** Lulinsky, S. and Krylov S., 2014, Electro-optically based liquid mass sensor using resonating micro-plate, International Conference on Optical MEMS and Nanophotonics, 125-126.
8. \***Guetta D.**, proceeding review on "Gamma-ray Burst Theory in the Fermi Era" astro-ph/1303.1619G
9. Coward et al., 2012 The mystery of the missing GRB redshifts, astro-ph/1206.5558, Proceedings of Science, Gamma-Ray Bursts 2012 Conference - GRB2012, May 07-11, 2012, Munich Germany
10. Coward et al. 2012, The Swift short gamma-ray burst rate density: prospects for detecting binary neutron star mergers by aLIGO, astro-ph/1206.5058 Proceedings

- of Science, Gamma-Ray Bursts 2012 Conference - GRB2012, May 07-11, 2012, Munich Germany
11. Stratta G., **Guetta D.** and Stella L., 2010, Evidence for an anticorrelation between the duration of the shallow decay phase and the burst energetics, deciphering the ancient Universe with GRBs. AIP Conference Proceedings, Volume 1279, pp. 421-423
  12. Stratta G., D'Avanzo P., Piranomonte S...**GuettaD.** et al. 2008, A study of the prompt and afterglow emission of the short GRB 061201, Gamma-Ray Bursts 2007, AIP Conference Proceedings, Volume 1000, pp. 297-300
  13. Galli A., **Guetta D.** & Piro L. 2008, Model predictions for the MeV-to-TeV emission of GRBs, 37th COSPAR Scientific Assembly. Held 13-20 July 2008, in Montréal, Canada., p.965
  14. \***Guetta D.** 2008, Can we use GRBs to probe the star formation rate at high redshift? AIP Conference Proceedings, Volume 966, pp. 41-45
  15. Antonelli L. A.; Romano P.; Testa V...**Guetta D.** et al. 2007, The puzzling afterglow of GRB 050721: a rebrightening seen in the optical but not in the X-ray, the multicolored landscape of compact objects. AIP Conference Proceedings, Volume 924, pp. 72-76
  16. \***Guetta D.** 2006, Analysis of X-ray flares in GRBs, the multicolored landscape of compact objects. AIP Conference Proceedings, Volume 924, pp. 17-25
  17. Covino S.; Malesani D.; Israel G. L...**Guetta D.** et al., 2006, The short/hard GRB 050709 and its star-forming host galaxy, Gamma-Ray Bursts in the Swift Era, AIP Conference Proceedings, Vol. 836, p.54-57
  18. Piran T. & \***Guetta D.**, 2006, The rate and luminosity function of Short GRBs, Gamma-Ray Bursts in the Swift Era, AIP Conference Proceedings, Vol. 836, p.58-63
  19. \***Guetta D.**, 2003, Neutrino flux from galactic Microquasars, Nuclear Physics B Proceedings Supplements, Volume 118, p.518. **IF 0.85, JR 17/21, Q4**
  20. \***Guetta D.** & Granot J. 2002, GRBs in Pulsar Wind Bubbles: Observational implications, Astronomical Society of the Pacific Conference Series, Volume 312, p.377-380
  21. **Guetta D.**, Spada M. & Waxman E. 2001, On the Neutrino Flux from Gamma-Ray Bursts, ESO ASTROPHYSICS SYMPOSIA, pp. 272-274
  22. Spada M., **Guetta D.** & Waxman E. 2001, Efficiency and Spectrum of Internal Gamma-Ray Burst Shock, ESO ASTROPHYSICS SYMPOSIA, pp. 275-277
  23. **Guetta D.** & Singer P. 2000, Determination of the strong g-coupling, Nuclear Physics B Proceedings Supplements, v. 93, p. 134-139, **IF 0.85, JR 17/21, Q4**

### Published scientific reports and technical papers

42 Gamma-Ray Bursts Coordinate Networks (GCN) Circular Reports

### Refereed articles and refereed letters in scientific journals, running numbers

1. Gagliardini S., Langella A., **Guetta D.** and Capone A. "Neutrino fluxes from different classes of galactic sources" 2024, ApJ 969, 161
2. Shvartzvald, Y. et al "ULTRASAT: A Wide-field Time-domain UV Space Telescope", 2024, ApJ 964, 29

3. Gagliardini S., Celli S., **Guetta D.** et al. 2023, "On the hadronic origin of the TeV radiation from GRB 190114C" JCAP 12
4. **Guetta D.**, Langella A., Gagliardini S. and Della Valle M., 2023, "Low and High energy neutrinos from SN 2023ixf in M101", ApJL955, L9
5. Becerra R. L., Klotz , A., Atteia J. L. , **Guetta D.** , et al. 2023, "Understanding the Nature of the Optical Emission in Gamma-Ray Bursts: Analysis from TAROT, COATLI, and RATIR Observations", MNRAS, 525, pp 3262
6. LIGO-VIRGO-KAGRA coll. 2023, "Open Data from the Third Observing Run of LIGO, Virgo, KAGRA, and GEO", The Astrophysical Journal Supplement Series, 267:29
7. Menon S. **Guetta D.** Dall'Osso 2023 S. "UV SIGNATURES OF MAGNETAR FORMATION AND THEIR CRUCIAL ROLE FOR GW DETECTION" ApJ955, pp 6
8. **Guetta D.**, Hillman Yael, Della Valle Massimo 2023, "Nova neutrinos in the multi-messenger Era". 2023, JCAP 03, id.015, 15 pp.
9. Chengchao, Y., Murase, K., **Guetta D.**, Peer A. and Bartos I. "GeV signatures of short gamma-ray bursts in active galactic nuclei", in press in Astrophysical Journal, 932,80
10. Banerjee S., Eichler D., **Guetta D.** 2022, "Luminosity Selection for Gamma Ray Bursts", Astronomy and Astrophysics 661, A145
11. Melandri, A., Izzo L., Pian E. et al. 2022, "The supernova of the MAGIC GRB 190114C", Astronomy and Astrophysics 659, 9.
12. Banerjee S., Eichler D., **Guetta D.**, 2021, Differential Source Count for Gamma Ray Bursts, 2021, Astrophysical Journal 921, 79.
13. Ciolfi, R., Stratta, G., Branchesi, M., Gendre, B. ,Fermani, P., **Guetta, D.** et al., 2021, Multi-Messenger Astrophysics with THESEUS in the 2030s,2021, Experimental Astronomy 126C.
14. Fasano M., Celli S., **Guetta D.**, Capone, T., Zagarelli, A., Di Palma, I. 2021, " Estimating the Neutrino Flux from Choked Gamma-Ray Bursts", 2021, Journal of Cosmology and Astroparticle Physics, 9, 044. CN:2, IF:5.839, JR:11/68, Q1
15. Rosati, P., Basa, P. ...**Guetta, D.** et al, 2021, Synergies of THESEUS with the large facilities of the '30s and GO opportunities", 2021, Experimental Astronomy 79R

16. **Guetta, D.**, Rahin, R., Bartos, I., Della Valle, M. 2020, Constraining the Fraction of Core-Collapse Supernovae Harboring Choked Jets with High-energy Neutrinos, *Monthly Notices of the Royal Astronomical Society*, 492, 843-847.
17. Della Valle, M.; **Guetta, D.** Cappellaro, E., Amati, L., Branchesi, M., Brocato, E., Izzo, L., Torres, M., Stratta, G., 2018 GW170817: implications for the local kilonova rate and for surveys from ground-based facilities, *Monthly Notices of the Royal Astronomical Society*, 481, 4355-4360.
18. Granot, J., Gill, R., **Guetta, D.**, De Colle, F., 2018, Off-Axis Emission of Short GRB Jets from Double Neutron Star Mergers and GRB 170817A, *Monthly Notices of the Royal Astronomical Society*, 481, 1597-1608
19. Granot, J.; **Guetta, D.**; Gill, R., 2018, Lessons from the Short GRB 170817A: The First Gravitational-wave Detection of a Binary Neutron Star Merger, *The Astrophysical Journal Letters*, 850, L24
20. Lamastra, A., Menci, N., Fiore, F., Antonelli, A., Colafrancesco, S., **Guetta, D.**, Stamerra, A., 2017, Extragalactic gamma-ray background from AGN winds and star-forming galaxies in cosmological galaxy-formation models, *Astronomy and Astrophysics* 607, A18
21. Di Palma, I.; **Guetta, D.**; Amato, E., 2017, Revised predictions of neutrino fluxes from Pulsar Wind Nebulae, *Astrophysical Journal*, 836, 159
22. Allison, P.,...**Guetta, D.**, on behalf of the ARA collaboration, 2017, Constraints on the ultra-high-energy neutrino flux from Gamma-Ray bursts from a prototype station of the Askaryan radio array, *Astroparticle Physics*, 88, 7-16.
23. Righi, C.; Tavecchio, F.; **Guetta, D.**, 2017, High-energy emitting BL Lacs and high-energy neutrinos - Prospects for the direct association with IceCube and KM3NeT, *Astronomy and Astrophysics*, Volume 598, A36
24. Lamastra, A.; Fiore, F.; **Guetta, D.**, Antonelli, A., Colafrancesco, S., Menci, N., Puccetti, S., Stamerra, A., Zappacosta, L., 2016, Galactic outflow driven by the active nucleus and the origin of the gamma-ray emission in NGC 1068 *Astronomy and Astrophysics*, 596, A68
25. Wygoda, N., **Guetta, D.**, Mandich, M. A., Waxman, E., 2016, The Energy Budget of GRBs Based on a Large Sample of Prompt and Afterglow Observations, *Astrophysical Journal* 824, 127.
26. Yacobi, L.; **Guetta, D.**; Behar, E., 2016, Implication of the Non-detection of GZK Neutrinos, *Astrophysical Journal*, 823, 89

27. Murase, Kohta; **Guetta, Dafne**; Ahlers, Markus 2016, Hidden Cosmic-Ray Accelerators as an Origin of TeV-PeV Cosmic Neutrinos, *Physical Review Letters*, Volume 116, 071101
28. Nir, G.; **Guetta, D.**; Landsman, H.; Behar, E. 2016, Ultra High Energy Neutrinos from Gamma-Ray Burst Afterglows Using the Swift-UVOT Data, *Astrophysical Journal* 817, 142
29. Allison, P. et al. 2015, First constraints on the ultra-high energy neutrino flux from a prototype station of the Askaryan Radio Array, *Astroparticle Physics*, Volume 70, p. 62-80 **CN: 7, IF:2.724, JR:30/68, Q2**
30. \***Guetta D.**, 2015, Neutrinos from Gamma Ray Bursts in the IceCube and ARA *Journal of High Energy Astrophysics*, Volume 7, p. 90-94. **CN: 4, IF:4.091, JR:22/68, Q2**
31. Amelino-Camelia G., **Guetta D.**, & Piran T., 2015, ICECUBE Neutrinos and Lorentz Invariance Violation, *Astrophysical Journal* 806, 269. **CN: 39, IF:5.877, JR:10/68, Q1**
32. Tavecchio, F.; Ghisellini, G. & **Guetta, D.** 2014, Structured Jets in BL Lac Objects: Efficient PeV Neutrino Factories?, *The Astrophysical Journal Letters*, 793, L18, **CN: 76, IF:7.413, JR:8/68, Q1**
33. Yacobi, L.; **Guetta, D.** & Behar, E. 2014, Constraints on the Hadronic Content of Gamma Ray Bursts, *The Astrophysical Journal*, 793, 48 **CN:18, IF:5.877, JR:10/68, Q1**
34. Amelino-Camelia G., Fiore F., **Guetta D.** & Puccetti S. 2014, Quantum-spacetime scenarios and soft spectral lags of the remarkable GRB130427A, *Advances in High Energy Physics*, 597384, **CN:12, IF:1.777, JR:19/29, Q3**
35. Mahajne S., **Guetta D.**, Lulinsky S., Krylov S., Linzon Y. 2014, Liquid mass sensing using resonating microplates under harsh drop and spray, *Physics Research International* 2014 **CN:12**
36. Castignani G., **Guetta D.**, Pian E., Amati L., Puccetti S. & Dichiara S., 2014 Testing the delay of MeV-GeV emission with respect to soft-gamma rays in Fermi-LAT GRBs, *Astronomy & Astrophysics*, Volume 565, 9 **CN:11, IF:6.209, JR:10/69, Q1**
37. Ando, S et al. on behalf of the ICECUBE collaboration, “multi-messenger astronomy with gravitational waves and high energy neutrinos”, 2013, *Reviews of Modern Physics*, 85, 1401-1420, **CN:66, IF:54.494, JR:1/86, Q1**
38. Baerwald P. and **Guetta D.**, 2013, Estimation of the neutrino flux and resulting constraints on hadronic emission models for Cyg X-3 using AGILE data, *The Astrophysical Journal*, Volume 773, 159, **CN:10, IF:5.877, JR:10/68, Q1**
39. Coward D., Howell E., Branchesi M., Strata G., **Guetta D.**, Gendre B., Macpherson D., The Swift Gamma-Ray Burst redshift distribution: selection biases and optical brightness evolution at high-z?, *Monthly Notices of the Royal Astronomical Society*, Volume 432, 2141-2149 **CN: 55, IF:5.287, JR:16/68, Q1**
40. Coward D., Howell E., Piran, T., Stratta, G., Branchesi M., Bromberg, O., Gendre B., **Guetta D.**, 2012, The Swift Short GRBs rate density, *Monthly Notices of the Royal Astronomical Society*, Volume 425, pp. 2668-2673 **CN: 149, IF:5.287, JR:16/68,**
41. Beniamini P., **Guetta D.**, Nakar E. & Piran, T. 2011, Limits on the GeV emission from gamma-ray bursts, *Monthly Notices of the Royal Astronomical Society*, Volume 416, pp. 3089-3097 **CN: 35, IF:5.287, JR:16/68, Q1**

42. Dall'Osso S., Stratta G., **Guetta D.**, Covino S., De Cesare G. & Stella L. 2011, "GRBs afterglows with energy injection from a spinning down neutron star", *Astronomy and Astrophysics*, 526, A121, **CN: 158, IF:6.209, JR:10/69, Q1**
43. \***Guetta D.**, Pian E. & Waxman E. 2011, FERMI constraints on the high energy, ~1 GeV, emission of long gamma ray bursts, *Astronomy and Astrophysics*, 525, A53, **CN: 53, IF:6.209, JR:10/69, Q1**
44. Eichler D., **Guetta D.** & Pohl, M. 2010, The High Energy Budget Allocations in Shocks and Gamma Ray Bursts, *The Astrophysical Journal*, 722, 543-549, **CN: 42, IF:5.877, JR:10/68, Q1**
45. Corsi A., **Guetta D.** & Piro L. 2010, High-energy Emission Components in the Short GRB 090510, *The Astrophysical Journal*, 720, 1008-1015 **CN: 72, IF:5.877, JR:10/68, Q1**
46. \***Guetta D.** & Eichler D. 2010, Wide Angle X-ray Sky Monitoring for Corroborating Non-Electromagnetic Cosmic Transients, *The Astrophysical Journal*, 712, 392-396 **CN: 7, IF:5.877, JR:10/68, Q1**
47. Corsi A., **Guetta D.** & Piro L. 2010, GeV emission from short Gamma-Ray Bursts: the case of GRB 081024B, *Astronomy and Astrophysics*, Volume 524, A92, **CN: 19, IF:6.209, JR:10/69, Q1**
48. Salvaterra R..., **Guetta, D.** et al. 2009, GRB090423 at a redshift of  $z \sim 8.1$ , *Nature*, Volume 461, 1258-1260, **CN: 589, IF: 42.778, Q1**
49. D'Elia V. et al. 2009, The Prompt, High-Resolution Spectroscopic View of the "Naked-Eye" GRB080319, *The Astrophysical Journal*, 694, 332-338 **CN: 71, IF:5.877, JR:10/68, Q1**
50. Stratta G., **Guetta D.**, D'Elia V., Perri M., Covino S. & Stella, L. 2009, Evidence for an anticorrelation between the duration of the shallow decay phase of GRB X-ray afterglows and  $z$ , *Astronomy and Astrophysics*, 494, L9-L12 **CN: 5, IF:6.209, JR:10/69, Q1**
51. \***Guetta D.** & Stella L. 2009, "Short  $\gamma$ -ray bursts and gravitational waves from dynamically formed merging binaries", *Astronomy and Astrophysics*, 498, 329-333 **CN: 61, IF:6.209, JR:10/69, Q1**
52. Eichler D., **Guetta D.** & Manis H., 2008, A Universal Central Engine Hypothesis for Short and Long Gamma-Ray Bursts, *The Astrophysical Journal Letters*, 690, L61-L64, **CN: 7, IF:7.413, JR:8/68, Q1**
53. Piranomonte S., D'Avanzo P., Covino S., Antonelli L. A., Beardmore V., Campana S., Chincarini G., D'Elia V., Della Valle M., Fiore F., Fugazza D., Guetta D., Guidorzi C., Israel G., D. Lazzati<sup>8,9</sup>, D. Malesani<sup>10</sup>, A. M. Parsons<sup>11</sup>, R. Perna<sup>8</sup>, L. Stella<sup>1</sup>, G. Tagliaferri<sup>2</sup>, and S. Vergani D. 2008, The short GRB 070707 afterglow and its very faint host galaxy, *Astronomy and Astrophysics*, 491, 183-188 **CN: 49, IF:6.209, JR:10/69, Q1**
54. Covino S., **Guetta D.** et al. 2008, The Afterglow Onset for GRB 060418 and GRB 060607A, *Chinese Journal of Astronomy & Astrophysics Supplement*, Vol. 8, p. 356-360, **CN: 4, IF:0.849, JR:39/55, Q3**
55. Covino S. ..**Guetta D.** et al. 2008, The complex light curve of the afterglow of GRB071010A, *Monthly Notices of the Royal Astronomical Society*, 388, 347-356, **CN: 61, IF:5.287, JR:16/68, Q1**
56. Coward D. M., **Guetta D.** Burman R. R. & Imerito A. 2008, Where are the missing gamma-ray burst redshifts?, *Monthly Notices of the Royal Astronomical Society*, 386, 111-116 **CN: 30, IF:5.287, JR:16/68, Q1**
57. Galli A. and **Guetta D.** 2008, Gamma-ray burst high energy emission from internal shocks, *Astronomy and Astrophysics*, 480, 5-13 **CN: 25, IF:6.209, JR:10/69, Q1**

58. Perri M., **Guetta D.** et al. 2007, The exceptionally extended flaring activity in the X-ray afterglow GRB050730, *Astronomy and Astrophysics*, 471, 83-92 **CN: 20, IF:6.209, JR:10/69, Q1**
59. Stratta G., D'Avanzo P., Piranomonte S., **Guetta D.** et al. 2007, A study of the prompt and afterglow emission of the short GRB 061201, *Astronomy and Astrophysics* 474, 827-835, **CN:58, IF:6.209, JR:10/69, Q1**
60. Fiore F., **Guetta D.**, Piranomonte S., D'Elia V. & Antonelli L. A. 2007, Selection effects shaping the gamma ray burst redshift distributions, *Astronomy and Astrophysics*, 470, 515-522, **CN: 66, IF:6.209, JR:10/69, Q1**
61. **\*Guetta D.** & Piran T. 2007, Do long duration gamma ray bursts follow star formation?, *Journal of Cosmology and Astroparticle Physics*, 07, 003, **CN: 103, IF:5.839, JR:11/68, Q1**
62. Molinari E...**Guetta, D.** et al. 2007, "REM observations of GRB 060418 and GRB 060607A" *Astronomy and Astrophysics*, Volume 469, pp. L13-L16 **CN: 298, IF:6.209, JR:10/69, Q1**
63. Antonelli A., Testa V., Romano P., **Guetta D.**, Torii K., Delia V., Malesani D., 2007, The puzzling afterglow of GRB 050721, *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, vol. 365, issue 1854, pp. 1235, **CN: 2, IF: 5.680,**
64. D'Elia..**Guetta D.** et al. 2007, UVES/VLT high resolution spectroscopy of GRB 050730 afterglow: probing the features of the GRB environment, *Astronomy and Astrophysics*, 467, 629-639 **CN: 62, IF:6.209, JR:10/69, Q1**
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### **Lectures and Presentations at Meetings and Invited Seminars not Followed by Published Proceedings (last five years)**

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#### **Invited plenary lectures at conferences/meetings**

1. July 2024, Invited Plenary Talk at QGMM24, Madrid, Spain
2. June 2024, Invited Plenary talk on “The use of electro-optical devices for the discovery of TeV-PeV Cosmic Neutrinos” at the Opto-Tech conference at Expo Tel Aviv, Israel
3. March 2024 talk “Neutrino Flux from Galactic Sources” at Very High Energy Phenomena in the Universe, Rencontres De Moriond 2024, La Thuille, Italy
4. July 2023, talk on “UV signals from magnetar in the ULTRASAT era”, ULTRASAT workshop, Weizmann, Israel
5. March 2023, Invited talk on “Hidden Cosmic-Ray Accelerators as an Origin of TeV-PeV Cosmic Neutrinos”, “International Conference on NGC1068”, Garching, Germany

6. September 2022, Invited plenary talk on “the hadronic origin of the TeV radiation from GRBs” at RICAP, Roma International Conference on AstroParticle Physics, Rome, Italy
7. September 2022, Invited plenary talk on “the hadronic origin of the TeV radiation from GRBs” at the conference on Gamma Ray Bursts, Trieste, Italy
8. May 2022, Invited Plenary talk on “The use of electro-optical devices for the discovery of TeV-PeV Cosmic Neutrinos” at the Opto-Tech conference at Expo Tel Aviv, Israel
9. March 2021, Invited Plenary Talk at the THESEUS International meeting with a talk on "Discovering the neutrino sources with THESEUS", zoom Conference.
10. September 2018, Invited Plenary Talk on "Multimessenger Probes of High-energy Sources", International Conference on Astroparticle Physics (RICAP 2018), University of Rome, Rome.
11. December 2017, Invited Plenary talk on "Neutrinos from astrophysical sources in the IceCube and ARA Era", International High energy physics conference, Playa Del Carmen, Mexico
12. November 2016, Invited talk on "Neutrinos from astrophysical sources in the IceCube and ARA Era", at Italian conference on GRBs, Bergamo, Italy
13. June 2016 Invited talk on "High Energy Neutrinos from Pulsar Wind Nebulae" at RICAP2016, Frascati, Italy
14. February 2016 Plenary Invited talk on "High Energy Neutrinos from Pulsar Wind Nebulae" Antares-KM3NET meeting, Germany Presentations at informal international seminars and workshops
15. February 2016, Talk on “Neutrinos from Pulsar Wind Nebulae”, Antares Workshop on Neutrinos Detector, Erlangen, Germany.

### **Seminar presentations at universities and institutions (In the last 5 years)**

1. December 2021, Colloquium at Bar Ilan University, Israel on “Interpretation of the IceCube high energy neutrino signal.
2. May 2018, Colloquium at La Sapienza University on “Neutrino signal, implication for the future detector KM3Net”
3. October 2016, Invited talk on "High Energy Neutrinos from Pulsar Wind Nebulae" at the Astrophysics Department of Wisconsin University, Medison, USA
4. October 2016, Invited talk on "High Energy Neutrinos from Pulsar Wind Nebulae" at the Astrophysics Department of Columbia University New York, USA

### **Research Grants**

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**2022 PI of the NSF-BSF submitted**

**2022 PI of the BSF submitted**

**2022 PI alone of the ISF submitted.**

**2021 ISF submitted.** Not granted but positive reviewers

**2020 ISF submitted** (the co-PI Prof. David Eichler passed away, therefore it was not considered for founding)

**2018 BSF submitted,** Optimum grade but not funded.

**2017 ESF COST Action PHAROS,** 150000\$, the "Multi-messenger physics and astrophysics of neutron star"

**2016 BSF submitted,** Optimum grade but not funded.

- 2013 BSF-Granted**, 170000\$ for the study of High-Energy Neutrinos from Astrophysical sources in the era of Kilometer-Scale Neutrino Detector (collaboration with Prof Francis Halzen from the USA)
- 2012** Grant from the Italian Embassy in Israel to support the organization of an Italian Israeli conference in Israel (~15.000 €)
- 2009-2011** Prin-INAF **local PI** on a project on “Re-thinking Gamma Ray Bursts”
- 2009-2011** ASI-Micela on a project “Exploring the hard X-ray
- 2009-2011** Grant on projects related to Swift
- 2007-2009** Prin-INAF on a project on “Dust Extinction”
- 2008-2009** Grant on a project on “Missing barions in the Universe”
- 2004-2007** University-INAF CoFin on a project related to Gamma-Ray Bursts

### Synopsis of research, including reference to publications and grants in the above list

#### Present Academic Activities

**It is important to remark the fact that in the last 7 years, I have led the work of several Masters, PhD and PostDoc students. Therefore, the students were the corresponding authors of the papers that were published, even if I had a principal role in the project.**

During my career as a researcher, I wrote more than 100 papers, several proposals and GRANT requests. I was the PI of a granted BSF project in collaboration with the IceCube neutrino detector team in Wisconsin, USA. I wrote most of the grant and led the collaboration among the co-PIs. During the BSF years, I visited the USA several times in order to keep the collaboration with the USA researchers. In most of the papers I wrote, I was the corresponding author or led and supervised the work of a PhD/postdoc student. **Since April 2022 I am part of the international LIGO-VIRGO experiment as representative of the Ariel University.**

**My main research interests are:**

- 1. ULTRASAT:** I am part of the collaboration of the ULTRASAT satellite. This is an Israeli satellite led by the Principal Investigator Prof. Eli Waxman, Weizmann, Israel. I am in several working groups: Transient stellar explosions, Gravitational wave sources, Gamma Ray Bursts and data analysis. The main role of my group is to model the UV light curves from several astrophysical sources and check the response of the instrument. The aim is to estimate the horizon and rates for different UV sources that ULTRASAT can detect. Given my recent works on cataclysmic variables (NOVAE) we aim to estimate the UV emission from these sources that can be considered as background sources for the main science objectives of ULTRASAT. We are looking for possible UV emission from Gamma Ray Bursts that can be detected by this satellite. Our plan is to use ULTRASAT to constrain the expected rate of choked GRBs.
- 2. KM3NeT-IceCube:** Another main topic of my research is the prediction of High Energy Neutrinos from astrophysical sources. I have written ~30 papers on this subject, most of them as corresponding author or leader of the work. In the last few years, I work on this topic in collaboration with the group of Rome led by Prof. Capone. Prof. Antonio Capone (Principal Investigator of the neutrino telescope KM3Net). Capone is a professor at La Sapienza University of Rome and is associated to the University of Ariel. Our final goal is to study in detail models to describe possible High Energy neutrino astrophysical sources, and to make prediction of neutrino fluxes valid for the future neutrino telescope KM3NeT. Because of the

IceCube landmark discovery that high energy neutrinos from astrophysical sources exist, high-energy cosmic neutrinos reveal an unobstructed view of the universe at energies where the universe is opaque to photons. I have got a BSF Grant on the subject of High Energy neutrinos from Gamma Ray Bursts. My group as part of Ariel University has joined the KM3NeT collaboration and work on simulations and data analysis. I am supervising the work of the PhD student in Ariel, Silvia Gagliardini.

3. **LIGO-Virgo:** Another main topic of my research is the modelling prediction of Gravitational Waves from astrophysical sources. I have written several papers on this subject that I have leaded. I am collaborating with Prof. Pia Astone, Chair of the Virgo group at University of Rome, La Sapienza. Prof. Astone is associated to the University of Ariel. The plan and goal of our joint proposal aim at improving the sensitivity and robustness of current analyses of LIGO/Virgo GW detectors for signals from isolated NSs and newborn magnetars, to make them more suited to face situations in which the signal waveforms do not match exactly our expectations. Synergies with EM observatories play a key role for the success of the project as EM data greatly help reduce the parameter space, hence enhancing both sensitivity and robustness of our searches. This will be of paramount importance for the GW detection of newborn magnetars; theory predicts them as powerful sources of long-lasting GW transients, in the first day after their birth in the core-collapse of a massive star (or, less likely, in a NS merger), but so far, they were never observed in the EM. The launch of Ultrasat, ideally suited to identify the early EM signatures of SN explosions (i.e., shock breakouts), represents in this respect the best opportunity for the first detection of an EM counterpart capable of narrowing down our magnetar search parameter space. In addition, the discovery of such an EM signature will represent on its own a great breakthrough in astrophysics. Through the combined observation of GWs and EM radiation, NSs become effective laboratory for astrophysics and fundamental physics opening completely new perspectives in the study of these fascinating objects, not allowed by short transient GWs. Interpretation of the observational results in the light of theoretical models will allow us to study the physics of matter at supranuclear density and in presence of ultra-strong magnetic fields. I have submitted an ISF Grant on this subject. I am supervising the work of my PhD student Sandhya Menon on this subject in Ariel.
4. **WISE-TESS-Galex:** I am supervising the work of a PhD student in Ariel (Bisi Bernard) and two master students on a data analysis project. The plan is to consider the data from different telescopes (IR, optical and UV) and compare the light curves of transient sources in the three bands. In particular we are looking for NOVA sources. We plan to work on the Multi-messenger Observations of Classical Nova Outbursts. Classical novae originate in interacting binary systems formed by a primary white dwarf (WD) that accretes matter from a late-type main sequence or a red giant companion. This work is performed in collaboration with Prof. Della Valle, who is also associated to the University of Ariel.
5. **MAGIC-CTA-HESS:** Another topic is the study of high energy photon (GeV, TeV) emission from astrophysical sources and their interpretation. I am leading the project on the estimate of TeV hadronic flux from Gamma Ray Bursts that have been detected at TeV energies.

The results of all my research have been presented in more than 30 different conferences. In the last 8 years I have been invited to present my work in more than 10 international Conferences. In the last 8 years I have written ~ 30 papers on different fields, for most of the papers the idea was mine and I completely leaded the work.

## Submitted papers

1. Padovani et al. 2024, “the case of NGC1068” submitted to Nature Astronomy
2. Zegarelli A., Guetta D. et al. 2024 “Towards multi-messenger observations of core-collapse supernovae harboring choked jets” 2024 Submitted to A&A
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