

Henrique Rubira – CV

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Interests	Large Scale Structure – Gravitational Waves – Dark matter Cosmological Perturbation Theory – First Order Phase Transitions
Work	Postdoc, from 2021 until today in Technische Universität München (TUM)
Education	PhD, between 2018-2021 in Deutsches Elektronen-Synchrotron (DESY) Thesis: “Across Scales in our Universe: GWs and the LSS Supervisor: Thomas Konstandin. MSc, between 2016-2018 in University of São Paulo Dissertation: “Effective Field Theories in Large Scale Structure” Supervisor: Marcos V. B. T. Lima. Internship: DESY (Sep 2017 - Dec 2017). BSc, between 2011-2015 in University of São Paulo
Fellowships	Master Overseas Fellowship, FAPESP, 2017 . Project: “Three Loops Matter Power Spectrum Calculation Using EFTs” Supervisor abroad: Thomas Konstandin Institute: DESY (Deutsches Elektronen-Synchrotron) Master Fellowship, FAPESP, 2016-2018 . Supervisor: Marcos V. B. T. Lima Institute: University of São Paulo Undergraduate Fellowship, FAPESP, 2013-2015 . Supervisor: Marcos V. B. T. Lima Institute: University of São Paulo
Awards	EuCAPT symposium , best presentation, 2022. XIX Swieca Summer School on Particles and Fields , best presentations, 2017. ICTP-SAIFR Young Physicists Award 2013 , top five.
Mentoring	Thiago Mergulhão , PhD candidate in Edinburgh. Asmaa Mazoun , PhD candidate in TUM.
Referee	MNRAS

Event	Axion day , Munich 2022
Organization	Neutrino Cosmology day , Munich 2022
Conferences	<p>EuCAPT22: “Effect of density fluctuations on gravitational wave production in first-order phase transitions” - lightening talks</p> <p>Cosmo’21: “A hybrid simulation of gravitational wave production in first-order phase transitions” - parallel talks</p> <p>EPS-HEP 21: “A hybrid simulation of gravitational wave production in first-order phase transitions” - parallel talks</p>
Workshops	<p>The science of Third-Generation GW Detectors 2019, Berlin.</p> <p>DESY Theory Workshop 2017, Hamburg.</p> <p>Minicourse on Data Analysis in Cosmology 2014, São Paulo.</p>
Colloquium	<p>What gravitational waves can teach us about the Big Bang</p> <p>TUM and LMU 2022, Munich.</p>
Schools	<p>MITP Summer School 2019, Mainz.</p> <p>Cosmology in the era of large surveys. 2018, La Plata.</p> <p>School on Open Problems in Cosmology 2017, São Paulo .</p> <p>XIX Swieca Summer School on Particles and Fields 2017, Maresias.</p> <p>IV Jayme Tiomno School of Cosmology 2016, Rio de Janeiro.</p> <p>School on Effective Field Theory across Length Scales 2016, São Paulo.</p> <p>School on Dark Matter 2016, São Paulo.</p> <p>School and Workshop on Observational Cosmology 2014, São Paulo.</p>
Selected Talks	<p>“The effective field theory of large-scale structure and multi-tracer”</p> <p>Max Planck Institute for Astrophysics, 2021</p> <p>“A hybrid simulation of gravitational wave production in first-order phase transitions”, Bielefeld Autumn Workshop 2020</p> <p>“A hybrid simulation of gravitational wave production in first-order phase transitions”, DESY Theory Workshop 2020.</p> <p>“The EFTofLSS at three loops”, MITP Summer School 2019</p> <p>“The EFTofLSS at three loops”, DESY Theory Workshop 2019</p> <p>“The EFTofLSS at three loops”, Bielefeld Kosmologietag 2019.</p>
Teaching	<p>Thermodynamics – Summer Semester 2022</p> <p>Alphabetization of adults in Math, Science and English:</p> <p>Social project developed in two schools in Brazil between 2013-2015</p>
Languages and Skills	<p>Portuguese (native), English, Spanish.</p> <p>C, C++, Python, Mathematica, Linux, Git.</p>

Henrique Rubira – Publications

My work lays pretty much in the interface between HEP and Astro communities, which use different conventions for the order in which the authors show up in the papers. [Papers in blue](#) use alphabetic order and all authors contributed similarly to the development of the project. [Papers in orange](#) use author contribution order.

- [1] Ryusuke Jinno, Thomas Konstandin, Henrique Rubira, Jorinde van de Vis
[Effect of density fluctuations on gravitational wave production in first-order phase transitions](#)
arXiv: 2108.11947
Published in JCAP 12 (2021) 12, 019
- [2] Thiago Mergulhão, Henrique Rubira, Rodrigo Voivodic, L. Raul Abramo
[The effective field theory of large-scale structure and multi-tracer](#)
arXiv: 2108.11363
Published in JCAP 04 (2022) 04, 021
- [3] Henrique Rubira and Rodrigo Voivodic
[The Effective Field Theory and Perturbative Analysis for Log-Density Fields](#)
arXiv: 2011.12280
Published in JCAP 03 (2021) 070
- [4] Ryusuke Jinno, Thomas Konstandin and Henrique Rubira.
[A hybrid simulation of gravitational wave production in first-order phase transitions](#)
arXiv: 2010.00971,
Published in JCAP 04 (2021) 014
- [5] Rodrigo Voivodic, Henrique Rubira and Marcos Lima.
[The Halo Void \(Dust\) Model of Large Scale Structure](#)
arXiv: 2003.06411
Published in: JCAP 10 (2020) 033
- [6] Valerie Domcke, Ryusuke Jinno and Henrique Rubira.
[Deformation of the gravitational wave spectrum by density perturbations](#)
arXiv: 2002.11083
Published in: JCAP 06 (2020) 046
- [7] Mathias Garny, Thomas Konstandin and Henrique Rubira.
[The Schrödinger-Poisson method for Large-Scale Structure](#)
arXiv: 1911.04505
Published in: JCAP 04 (2020) 003
- [8] Thomas Konstandin, Rafael A. Porto and Henrique Rubira.
[The Effective Field Theory of Large Scale Structure at Three Loops](#)
arXiv: 1906.00997
Published in: JCAP 11 (2019) 027