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## Effects of heavy fields on inflationary cosmology

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### Citation

Ortiz, P. (2014, September 30). *Effects of heavy fields on inflationary cosmology*. *Casimir PhD Series*. Retrieved from <https://hdl.handle.net/1887/28941>

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**Title:** Effects of heavy fields on inflationary cosmology

**Issue Date:** 2014-09-30

## Publications

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- ‘*Sgoldstino Inflation.*’ Ana Achúcarro, Sander Mooij, Pablo Ortiz and Marieke Postma. *JCAP* **1208** (2012) 013, [arXiv:1203.1907\[hep-th\]](#).
- ‘*Localized correlated features in the CMB power spectrum and primordial bispectrum from a transient reduction in the speed of sound.*’ Ana Achúcarro, Vicente Atal, Pablo Ortiz and Jesús Torrado. *Phys.Rev.* **D89** (2014) 103006, [arXiv:1311.2552\[astro-ph.CO\]](#).
- ‘*Inflation with moderately sharp features in the speed of sound: GSR and in-in formalism for power spectrum and bispectrum.*’ Ana Achúcarro, Vicente Atal, Bin Hu, Pablo Ortiz and Jesús Torrado. *Phys.Rev.* **D90** (2014) 023511, [arXiv:1404.7522\[astro-ph.CO\]](#).
- ‘*Perturbative stability along the supersymmetric directions of the landscape.*’ Kepa Sousa and Pablo Ortiz. [arXiv:1408.6521\[hep-th\]](#).



# Curriculum Vitæ

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I was born in Madrid, Spain, on 6 December 1985. I attended primary and high school at ‘Padre Manyanet’ until 2003. Later in September of the same year I started my bachelor in Physics in Universidad Autónoma de Madrid (UAM). During my last and fifth year I received a grant to collaborate in the Theoretical Physics department with Dr. Luis M. Robledo on a project related to modelling nuclear fission. I graduated in 2008 and a few months later I started the Master program on Theoretical Physics in Universidad Autónoma de Madrid. During my master studies I benefited two consecutive years from an MSc scholarship given by the same university. From 2009 to 2010, on the second year of the master program, I wrote a master thesis on “Phenomenology of massive neutrinos in particle physics and astrophysics”, supervised by Dr. Michele Maltoni. I graduated in 2010 and rapidly moved to Leiden, The Netherlands, where I started my PhD under the supervision of Prof. dr. Ana Achúcarro and co-supervision of Prof. dr. Jan-Willem van Holten. I was affiliated to two institutions: the Instituut-Lorentz for Theoretical Physics at Leiden University, and the National Institute for Subatomic Physics (Nikhef) in Amsterdam. I was financially supported by the Dutch Foundation for Fundamental Research on Matter (FOM). During my PhD I was teaching assistant for the courses on Elementary Particle Physics (two years), and Theory of General Relativity (two years). In 2014 I was awarded the “Teaching assistant of the year” prize. During the last year, I have enjoyed several stays at the Theoretical Physics department of the University of the Basque Country (UPV/EHU).



# Acknowledgements

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My biggest thanks go to my supervisor Ana Achúcarro, who has inspired me along the four years of my PhD. I have enjoyed uncountable discussions with her, and also being a teaching assistant next to her, she has pushed even further my motivation to teach. At the personal level, she has had a tremendous stamina in managing situations, supporting me in the best and worst moments. Last, she has given me the opportunity to present our work in a very large number of meetings, the chance to take the leadership, and trusted me to do so. For those reasons and everything else I thank you.

Secondly, I want to thank my co-supervisor Jan-Willem van Holten, who shared his expertise in Supersymmetry and Supergravity with me. He has been always willing to discuss and help me with the most technical aspects of the work. He has always shown himself understanding, flexible, and professional. I thank you for offering your valuable help all these years.

I also want to thank the collaborators that have worked together with me in the articles presented in this thesis: Ana Achúcarro, Vicente Atal, Bin Hu, Sander Mooij, Marieke Postma, Kepa Sousa and Jesús Torrado. I have tremendously enjoyed working with them, and I really hope we keep collaborating in the future. It has been a great pleasure to learn so much from them, not only in offices with blackboards, but also in bars (or borrels) with food and drinks. ‘Giving birth’ to articles is a hard but joyful task when you are surrounded by the right people. Thank you for making of this such a pleasant journey.

I am grateful to the members of the Theoretical Physics department at the University of the Basque Country for their hospitality and for the stimulating and kind atmosphere during my visits, especially to José Juan Blanco-Pillado, Jonathan Frazer and Jon Urrestilla. I also want to acknowledge plenty of discussions with Andrea Borghese, Diederik Roest, Marco Scalisi and Ivonne Zavala, and the hospitality of the University of Groningen.

## Acknowledgements

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There is a multitude of physicists that have been by my side during these four years, with whom I have talked about Physics and life in every lunch, meeting, or gathering we have held together in the Netherlands. In addition to those aforementioned, an incomplete list of these people is the following: Ted van der Aalst, Giuseppe d'Ambrosi, Dražen Glavan, Marija Kovacevic, Ivano Lodato, Wout Merbis, Valentin Reys, Wessel Valkenburg, Jan Weenink, Yvette Welling, and all the other cosmologists in Leiden. Special thanks to the organizers and participants of the Theoretical Cosmology meetings and Theory meetings, I personally enjoyed the big family that we have formed over the years. In these meetings, I have not only benefited from a large network of theoretical physicists, but also made many good friends. I thank you for all the good moments we have shared together.

But I would have never arrived to the Netherlands without my previous formation as a theoretical physicist in Madrid, where I studied seven years. My physicist friends have made of me the physicist that I am today, and without them I would not be the same. I cannot count the hours we have spent working together among coffees, teas, beers and 'palmeras', and how much I learnt from all of you, not to mention the great days and nights we spent together in Madrid and elsewhere in the world. Alba, Clara, Edu, Emilio, Drino, Ernesto, Fito, Luis, Manuela, Miguel, Paco, Paloma, Paula, Pepe and Yago, thanks for everything.

Outside the physics world, I have counted on many friends who have been my family in the Netherlands. They have supported and helped me, put up with my stubbornness, but most of all, we have shared all kind of great experiences. They have made these years much more enjoyable and easier to me. I sincerely thank Ander, Arachne, Bego, César, Fani, Guillem, Manu and Mónica... a thousand thanks for being there. Here I also want to thank those persons who first helped me to settle down in Leiden: Brian, Fran, Leanne, Marianne and Saskia, thanks for receiving me with open arms.

To my family, that during their lives have been working very hard so that I could write this little book; I will always be grateful to them. They have always been at my side, especially during the last four years, and I could have never gotten here without them. A million thanks for your unconditional love and support.

To my dear Helena, who has been a source of endless support, standing by my side, taking all in, listening to my incomprehensible speeches, making every day more unique than the previous one, taking care of me, and sharing joy with me. This journey has been so much more rewarding with you at my side. You have encouraged me and helped me when I needed it most. For all this, I love you and I thank you.