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A search for transient reductions in the inflaton speed of sound in cosmological data, and other topics

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List of publications

- [1] B. Hu and **J. Torrado**,
Searching for primordial localized features with CMB and LSS spectra,
accepted in Phys. Rev. D,
arXiv:1410.4804 [astro-ph.CO].
- [2] A. Achucarro, V. Atal, B. Hu, P. Ortiz and **J. Torrado**,
*Inflation with moderately sharp features in the speed of sound: Generalized
slow roll and in-in formalism for power spectrum and bispectrum*,
Phys. Rev. D **90** (2014) 023511,
arXiv:1404.7522 [astro-ph.CO].
- [3] A. Achucarro, V. Atal, P. Ortiz and **J. Torrado**,
*Localized correlated features in the CMB power spectrum and primordial bis-
pectrum from a transient reduction in the speed of sound*,
Phys. Rev. D **89** (2014) 103006,
arXiv:1311.2552 [astro-ph.CO].
- [4] M. Fischer, M. Ratz, **J. Torrado** and P.K.S. Vaudrevange,
Classification of symmetric toroidal orbifolds,
JHEP **1301** (2013) p. 084,
arXiv:1209.3906 [hep-th].

Curriculum vitæ

I was born in Badajoz (Spain) in 1984, and raised in the nearby little village of Barcarrota. I attended primary school at Colegio Santiago Apóstol in Barcarrota, and secondary school at Colegio Hernando de Soto in Barcarrota, and Colegio Santo Ángel in Badajoz. I attended high school at Instituto Zurbarán, in Badajoz.

In 2002, I enrolled in Physics at the University of Extremadura in Badajoz. During my undergraduate studies I was awarded a SICUE/Séneca grant, which allowed me to move to Salamanca to finish my studies with a major in Fundamental Physics. During my stay in Salamanca, I was awarded three short research fellowships: at the Institute for Mathematics and Fundamental Physics of the CSIC in Madrid, at the Physics Department of the University of Salamanca, and at the Institute for Astrophysics of the Canary Islands in Tenerife. It was during those fellowships that I decided to pursue an academic research career.

After being awarded a Ph.D. fellowship at the Graduate School “Particle Physics at the Energy Frontier of New Phenomena”, I started my Ph.D. studies in 2010 at the Physics Department of the Technical University of Munich, under the supervision of prof. dr. Michael Ratz, on *Model building in Heterotic Orbifolds*. Later, I moved to the Institute Lorentz of the University of Leiden, under the supervision of prof. dr. Ana Achúcarro, where I continued and concluded my Ph.D. studies on *Searches for turns in the inflaton potential in cosmological data*. During my Ph.D. studies I performed teaching assistance in Particle Physics during several terms, visited various research institutions and attended many conferences on Theoretical Physics and Cosmology.

In 2014, I moved to the Institute for Astronomy of the University of Edinburgh as a postdoctoral researcher in the group of prof. dr. Andrew Liddle.

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“ [On his way to school, Felipe reads the inscription of a statue:]
‘Tireless fighter of illustrious ideas...’ [and moans:]
‘Anybody can do that. The real feat is to be tired and keep fighting’.”
— Joaquín Salvador Lavado (Quino)

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