Dr. Stefano Orani

Place and Date of Birth:	Belgium, 13th of August 1986
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Relevant expertise: Mathematical modelling, statistical analysis (mathematica, matlab, R, Python), programming languages (fortran, C++), problem-solving.
Relevant experience: Worked with international teams of researchers, led research projects, solved difficult problems, author of 9 articles published in peer-reviewed scientific journals, experienced public speaker (presentations, seminars), ability to clearly explain difficult concepts.

Work Experience

since 09/2017	**Consultant/Data Scientist**, Altran/ISY, Brussels, Belgium Client: TOYOTA MOTOR EUROPE Statistical analysis (descriptive statistics and machine learning) of data from connected cars, using R (package development) and Python. Creation of a relational database (PostgreSQL).
04/2013 to 07/2017	**PostDoc/Assistant**, University of Basel, Switzerland Research in theoretical physics/cosmology Mathematical modelling of the early universe. Developed numerical codes to solve partial differential equations. Developed statistical analysis tools to extract predictions. Published research in peer-reviewed academic journals. Created and taught a Masters' course on *Early Universe Physics*. Supervised Masters' students during compulsory research project. Contributed to training and supervision of two PhD students.

Education

10/2009 to 07/2013	**PhD in Theoretical Physics**, Imperial College London, UK Thesis: *Cosmological Perturbations from Hybrid Potentials* PhD advisor: Prof. Arttu Rajantie Mathematical modelling of the early universe. Published research in peer-reviewed academic journals.
09/2009	**MSc in Theoretical Physics**, Imperial College London, UK
07/2008	**BSc in Physics**, Université Libre de Bruxelles, Belgium
Fall 2007	Exchange Semester at Université de Montréal, Canada
07/2004	European School of Brussels II, Brussels, Belgium

Languages

English:	fluent	Italian:	native	German:	basic
French:	fluent	Greek:	fluent	Spanish:	conversational

List of publications

Link to publications on INSPIRE

[1] S. Antusch, F. Cefala and S. Orani,
What can we learn from the stochastic gravitational wave background produced by oscillons?, arXiv:1712.03231 [hep-th].

[2] S. Antusch, F. Cefala, S. Krippendorf, F. Muia, S. Orani and F. Quevedo,
Oscillons from String Moduli, arXiv:1708.08922 [hep-th].

[3] S. Antusch, F. Cefala and S. Orani,
Gravitational waves from oscillons after inflation,
Phys.Rev.Lett. 118 (2017) no.1, 011303, arXiv:1607.01314 [astro-ph.CO].

[4] S. Antusch and S. Orani,
Impact of other scalar fields on oscillons after hilltop inflation,
JCAP 1603 (2016) 03, 044, arXiv:1511.02336 [hep-ph].

[5] S. Antusch, F. Cefala, D. Nolde and S. Orani,
Parametric resonance after hilltop inflation caused by an inhomogeneous inflaton field,
JCAP 1602 (2016) 02, 026, arXiv:1510.04856 [hep-ph].

[6] S. Antusch, D. Nolde and S. Orani,
Hill crossing during preheating after hilltop inflation,
JCAP 1506 (2015) 06, 009, arXiv:1503.06075 [hep-ph].

[7] S. Antusch, F. Cefala, D. Nolde and S. Orani,
False vacuum energy dominated inflation with large r and the importance of κ_s,
JCAP 1410 (2014) 10, 015, arXiv:1406.1424 [hep-ph].

[8] S. Antusch, D. Nolde and S. Orani,
Hilltop inflation with preinflation from coupling to matter fields,
JCAP 1405 (2014) 034, arXiv:1402.5328 [hep-ph].

[9] J. Elliston, S. Orani and D. J. Mulryne,
General analytic predictions of two-field inflation and perturbative reheating,
Phys.Rev. D89 (2014) 10, 103532, arXiv:1402.4800 [astro-ph.CO].

[10] S. Orani,
Cosmological Perturbations from Hybrid Potentials,
PhD thesis, arXiv:1308.5525 [astro-ph.CO].

[11] S. Orani and A. Rajantie,
Supersymmetric hybrid inflation with a light scalar,
Phys.Rev. D88 (2013) 043508, arXiv:1304.8041 [astro-ph.CO].

[12] D. Mulryne, S. Orani and A. Rajantie,
Non-Gaussianity from the hybrid potential,
Phys.Rev. D84 (2011) 123527, arXiv:1107.4739 [hep-th].

Conference contributions and seminars

1	Swiss Cosmology Days 2017 University of Basel, 06-07/02/2017	**Organizer** **presentation based on [3]**
2	Probing the early Universe with Gravity APC, Paris, 23-25/11/2016	**presentation based on [3]**
3	Queen Mary University of London London, 09/11/2016	**invited seminar based on [3]**
4	LISA Cosmology WG meeting 2016 DESY, Hamburg, 17-21/10/2016	**presentation based on [3]**
5	Université catholique de Louvain Louvain-La-Neuve, 18/05/2016	**invited seminar based on [4]**
6	RWTH Aachen, 22/01/2016	**invited seminar based on [5]**
7	28th TEXAS Symposium 2015 Geneva, 14-18/12/2015	**presentation based on [5]**
8	COSPA Mons, 20/05/2015	**presentation based on [6]**
9	Swiss Cosmology Days 2015 Geneva, 06-07/02/2015	**presentation based on [6]**
10	Particle Cosmology after Planck DESY, Hamburg, 23-26/09/2014	**presentation based on [7]**
11	Imperial College London London, 09/05/2014	**invited seminar based on [8]**
12	Université de Namur Namur, 17/01/2014	**invited seminar based on [8]**
13	PASCOS 2013 Taipei, 20-26/11/2013	**presentation based on [11]**
14	Queen Mary University of London London, 16/01/2013	**invited seminar based on [11] and [12]**
15	University of Basel Basel, 16/10/2012	**invited seminar based on [11] and [12]**
16	Workshop on Non-Equilibrium FT in Cosmology, London, 20-21/09/2012	**Organizer** **presentation based on [12]**
17	LCDM, KCL London, 24/05/2012	**presentation based on [12]**
18	Helsinki Institute of Physics Helsinki, 24/01/2012	**invited seminar based on [12]**
19	UKCOSMO, ICG Portsmouth, 14/09/2011	**presentation based on [12]**
20	COSMO 2011 Porto, 22-26/08/2011	**poster based on [12]**