

# Valerio Astuti

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## PERSONA

**Born:** July 5, 1986 in Frosinone.

**Range of studies:** Quantum mechanics, quantum field theory, quantum gravity, statistical mechanics, complex systems.

**Research interests:** Fundamental physics, quantum gravity phenomenology, statistical mechanics applied to complex systems, mathematical physics.

## EDUCATION

**2000-2005:** Scientific High School Degree at "Liceo Scientifico F. Severi" in Frosinone.

**2005-2008:** First cycle degree in Physics at "Sapienza" University of Rome, with marks 110/110 "con Lode" (top marks with honors). Thesis title: "*Representation theory applied to quantum mechanics*". Supervisor: Guido Martinelli.

**2009-2011:** Second cycle degree in Physics at "Sapienza" University of Rome with marks 110/110 "con Lode" (top marks with honors). Thesis title: "*Noether's theorem for interacting field theories on noncommutative spacetime*". Supervisor: Giovanni Amelino-Camelia.

**2011-2014:** Ph.D. in Physics at "Sapienza" University of Rome. Supervisor: Giovanni Amelino-Camelia.

**2013:** Visiting Graduate Fellow at the "Perimeter Institute for Theoretical Physics", in Ontario, Canada.

## PUBLICATIONS

**06/2012:** G. Amelino-Camelia, V. Astuti, G. Rosati, "Relative locality in a quantum spacetime and the pregeometry of  $\kappa$ -Minkowski", currently under journal review, preprint on arxiv:1206.3805.

**07/2012:** G. Amelino-Camelia, V. Astuti, G. Rosati, "Gravity's weight on worldline fuzziness", preprint on arxiv:1207.2509, Int. J. Mod. Phys. D 21 (2012) 1242012.

**02/2013:** G. Amelino-Camelia, V. Astuti, G. Rosati "Relative locality and gravity's weight on worldline fuzziness", J.Phys.Conf.Ser. 410 (2013) 012143.

**02/2013:** V. Astuti, "Worldline fuzziness and spacetime noncommutativity", J.Phys.Conf.Ser. 411 (2013) 012002.

**04/2013:** G. Amelino-Camelia, V. Astuti, G. Rosati, "Predictive description of Planck-scale-induced spacetime fuzziness", Phys.Rev. D87 (2013) 084023.

## CONFERENCES AND WORKSHOPS

06/2012:	“The XXth international conference on integrable systems and quantum symmetries”, held in Prague, with the presentation “ $\kappa$ -Minkowski description of spacetime foam”.
07/2012:	“Non-locality: aspects and consequences” workshop, held in Stockholm.
07/2012:	“Thirteenth Marcel Grossmann meeting”, held in Stockholm, with the presentation “Kinematics of the $\kappa$ -Minkowski pregeometry”. Proceedings to be published in the International Journal of Modern Physics D.

## TEACHING ACTIVITIES

2009-2012:	Private lectures to undergraduate students in Physics, Engineering, Economics and other scientific curricula.
2012:	Teaching assistant for the “Istituzioni di Matematica” (introductory mathematics and mathematical analysis) course, Department of Chemistry, “Sapienza” University of Rome, with Prof. Maria Vittoria Marchi.

## ADDITIONAL INFORMATIONS, SCHOLARSHIPS AND PRIZES

2006-2011:	Winner of the “Laziodisu” scholarship at “Sapienza” University of Rome for the entire duration of the studies.
2011:	Winner of a Ph.D. scholarship at “Sapienza” University of Rome.
2012:	Member of the project “Quantum Gravity Theories of Not Everything”, winner of a grant from the “John Templeton Foundation”.
2012:	Honorable mention from the “Gravity Research Foundation” for the essay “Gravity’s weight on worldline fuzziness” ( <a href="http://www.gravityresearchfoundation.org/pdf/abstracts/2012abstracts.pdf">www.gravityresearchfoundation.org/pdf/abstracts/2012abstracts.pdf</a> ).
2013:	Selected for the “Visiting Graduate Fellows” program at “Perimeter Institute for Theoretical Physics” ( <a href="http://www.perimeterinstitute.ca">www.perimeterinstitute.ca</a> ).

## LANGUAGE SKILLS

Italian:	Mothertongue.
English:	Fluent, both written and spoken.

## OTHER SKILLS

Informatics:	Good knowledge of C/C++, Windows, Linux.
Sports:	Taekwondo: experience as instructor. Swimming: master level.