Curriculum Vitae – Edoardo Carlesi

Personal information

Birth 23/09/1983, Pisa, Italy.
Citizenship Italian
Permanent address Via Archelao di Mileto 30 00124, Roma, Italy
Current address Rechov Rivka 22/53, 93461, Jerusalem, Israel
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Education

2014 Ph.D. (Cum Laude) in Theoretical Physics, Universidad Autonoma de Madrid (Spain)

2009 MSc (Cum Laude) in Theoretical Physics, Università degli Studi Roma Tre (Italy)

2005 BS (Cum Laude) in Physics, Università degli Studi Roma Tre (Italy)

Professional Experience

10/2014 → Today Postdoctoral fellow at the Racah Institute Of Physics, Hebrew University, Jerusalem, Israel

11/2010 – 09/2014 Assistant Professor and Ph.D. student at the Universidad Autonoma de Madrid, Madrid, Spain

03/2012 – 06/2012 Visiting student at the Institute of Astronomy, School of Physics, University of Sydney, Sydney, Australia

05/2008 – 10/2009 Java developer, Sinologische Institut Heidelberg, Heidelberg, Germany

05/2008 – 11/2008 Visting student at the Heidelberg Institut für Theoretische Physik, Ruprecht Karls Universität Heidelberg, Heidelberg, Germany

Grants and Awards

10/2016 Awarded the Golda Meir Fellowship (∼20000$ per year)

10/2015 Awarded the Lady Davis Fellowship (∼10000$ per year)

09/2013 NSF Grant (1000$) to join the PACIFIC 2013 Symposium.

02/2012 UAM Travel Grant (∼6000$) to visit the Institute of Astronomy, University of Sydney.

Talks

07/2016 Invited talk at the *Large Scale Structure and Galaxy Flows* conference, Quy Nohn, Vietnam

06/2016 Invited talk at the *CLUES Project* annual meeting, Technion, Haifa, Israel

04/2016 Invited talk at the *Near Field Cosmology* thinkshop, Innsbruck University Center, Obergurgl, Austria

05/2015 Invited talk at the *CLUES Project* annual meeting, DARK Cosmology Center, Copenhagen, Denmark

12/2014 Invited talk at the *The Quest for Dark Energy II - Workshop*, Ringberg Castle, Munich, Germany

08/2014 Invited talk at the *CLUES Project* annual meeting, AIP Potsdam, Germany

04/2014 Contributed talk at the *CosKASI 2014* conference, Daejeon, Republic of Korea

09/2013 Contributed talk at the *PACIFIC 2013* symposium, Moorea, French Polynesia

05/2013 Invited talk at the *Workshop on Cosmological Simulations: From galaxies to clusters to the large scale structures*, Miraflores de la Sierra (Madrid), Spain

06/2012 Invited talk at the *CLUES Project* annual meeting, Lyon, France

09/2011 Contributed talk at the *Observational Cosmology* summer school, University Of Azores, Portugal

06/2011 Invited talk at the *CLUES Project* annual meeting, Sussex University, Brighton, UK

05/2011 Invited talk at the *Nature of Dark Energy* workshop, UAM/IFT, Madrid, Spain

04/2011 Invited talk at the fourth *MultiDark* workshop, UAM/IFT, Madrid, Spain

Seminars

05/2016 *Astronomska Opservatorija u Beogradu*, Belgrade, Serbia

04/2016 *Instituto de Astrofísica de Canarias*, Tenerife, Spain

03/2016 *Astronomy Group*, Tel Aviv University, Tel Aviv, Israel

10/2015 *Dipartimento di Fisica*, Università La Sapienza, Roma, Italy

10/2014 *Racah Institute of Physics*, Hebrew University, Jerusalem, Israel

09/2014 *IPNL*, Université de Lyon 1, Lyon, France

05/2014 PhD thesis defence, *Departamento de Física Teórica*, UAM, Madrid

04/2014 *Astrophysikalisches Institut Potsdam*, Potsdam, Germany

Participation in Schools and Workshops

03/2015 Statistical Inference for Astro and Particle Physics Workshop, Weizmann Institute, Rehovot, Israel

03/2013 Cosmological Tests of Gravity (EUCLID Workshop) in Oxford, UK

11/2012 Barcelona supercomputing center school on *Parallel computing*, Barcelona, Spain

11/2011 *MultiDark* workshop, Matalascañas, Huelva, Spain

07/2011 *Fronteras de la Computación* workshop in Benasque, Spain

07/2011 *ISAAP* summer school in Heidelberg, Germany

03/2010 *Fisher matrix forecasts and the iCosmo package*, IFIC, Valencia, Spain

01/2010 *MultiDark* workshop, UAM, Madrid, Spain

Participation in Research Projects

June 2013 – June 2015 *El Proyecto de Cosmología Numérica MareNostrum: Un Laboratorio Virtual Sobre la Evolución del Universo* MINECO (Spain) - AYA2012-31101

May 2011 – September 2014 *Multimessenger approach for Dark Matter Detection*, CSD2009-00064

March 2011 – June 2013 *El Proyecto de Cosmología Numérica MareNostrum: Un Laboratorio Virtual Sobre la Evolución del Universo*, AYA2009-13857-C03-02

IT Skills

OS Linux, Android, Windows

Programming languages Very good knowledge of C and C++, good knowledge of bash scripting, good knowledge of Java, basic knowledge of Android Java/XML app development, basics of Python and Fortran

Parallel APIs Good programming knowledge of MPI and OpenMP, basics of CUDA for GPU

Other languages/packages known IDL, TeX, HTML, gnuplot, OpenOffice, basics of Octave/Matlab

Software and Numerical Packages

MergerTree AHF MergerTree calculator. Written in C, I designed and implemented an MPI parallel version of it.

Ginnungagap Initial Conditions generator for cosmological simulations. Written in C, MPI parallel.

IceCore Generator of constrained gaussian white noise fields for Initial Conditions. Written in C++, I designed and implemented an MPI parallel version of it.

AHF Halo Finder for cosmological simulations. Written in C, MPI/OpenMP parallel, I designed and implemented a version suited for non-standard dark energy models.

Gadget-2.0 Cosmological N-Body solver. Written in C, MPI parallel, I designed and implemented a version suited for non-standard and interacting dark energy models.

CMBEasy Boltzmann code for cosmological parameter estimation. Written in C++, MPI parallel, I designed an implemented a version suited for neutrino-interacting dark energy models.

Outreach

12/2011 Interview for *The New Scientist* magazine, on the topic of dark energy and old massive galaxy clusters. *https://www.newscientist.com/article/dn21315-variable-dark-energy-could-explain-old-galaxy-clusters/*

05/2016 Presentation on *Torat Einstein vegalei hakvida* (Einstein Theory and Gravitational Waves) for the group *Esrim zot hatkhalah*, Ein Kerem, Jerusalem, Israel

Teaching Experience

09/2013 – 12/2013 TA, Laboratorio de Circuitos Electronicos (Laboratory of Electronics), Faculty of Engineering, UAM ... (60 h)

09/2012 – 12/2012 TA, Laboratorio de Circuitos Electronicos (Laboratory of Electronics), Faculty of Engineering, UAM ... (60 h)

11/2011 – 02/2012 TA, Laboratorio de Física para Biologos (Physics Laboratory for Biologists), UAM ... (20 h)

09/2011 – 12/2011 TA, Laboratorio de Circuitos Electronicos (Laboratory of Electronics), Faculty of Engineering, UAM ... (40 h)

04/2011 – 06/2011 TA, Laboratiorio de Física para Quimicos (Physics Laboratory for Chemists), UAM ... (24 h)

11/2010 – 02/2011 TA, Laboratiorio de Física para Biologos (Physics Laboratory for Biologists), UAM ... (36 h)

09/2006 – 02/2007 TA, Fisica 2 (General Physics 2), Department of Mathematics, Universitá degli Studi Roma 3 .... (40 h)

Languages

Italian Mother tongue

English Excellent level, spoken and written (fluent)

Spanish Excellent level, spoken and written (fluent)

Serbo-Croatian Excellent level, spoken and written (fluent)

German Good level, spoken and written (conversation)

French Good level, spoken and written (conversation)

Russian Good level, spoken and written (conversation)

Hebrew Good level, spoken and written (conversation)

Portuguese Basic level, spoken and written (fair)

Arabic (Levantine Dialect and MSA) Basic level, spoken and written (fair)

Publications

9. The tangential velocity of M31: CLUES from constrained simulations.
   E. Carlesi, Y. Hoffman, J. Sorce, S. Gottlöber, G. Yepes, H. Courtois, B. Tully.
   Accepted for publication in MNRAS letters (2016)
8. Constrained Local UniversE Simulations: A Local Group Factory.
   E. Carlesi, J. Sorce, Y. Hoffman, S. Gottlöber, G. Yepes, N. Libeskind, S. Pilipenko, A. Knebe, H. Courtois, B. Tully, M. Steinmetz.
   MNRAS 458, 900, 2016
7. Cosmicflows constrained local universe simulations.
   J. Sorce, S. Gottloeber, M. Steinmetz, Y. Hoffman, B. Tully, H. Courtois, D. Pomarede, **E. Carlesi**.
   MNRAS 455, 2078, 2016
6. Hidden from view: Coupled dark sector physics and small scales.
   P. Elahi, G. F. Lewis, C. Power, **E. Carlesi**, A. Knebe.
   MNRAS 452, 1341, 2015
5. On the observability of coupled dark energy with cosmic voids.
   P. Sutter, **E. Carlesi**, A. Knebe, B. Wandelt.
   MNRAS 446, 1, 2015
4. Hydrodynamical simulations of coupled and uncoupled Quintessence models - II. Galaxy clusters.
   E. Carlesi, A. Knebe, G.F. Lewis, G. Yepes.
   MNRAS 439, 2958, 2014
3. Hydrodynamical simulations of coupled and uncoupled Quintessence models - I. Halo properties and the cosmic web.
   E. Carlesi, A. Knebe, G.F. Lewis, S. Wales, G. Yepes.
   MNRAS 439, 2943, 2014
2. N-body simulations of a Vector Dark Energy model.
   E. Carlesi, A. Knebe, G. Yepes, S. Gottlöber, A. Maroto, J. Beltran.
   MNRAS 425, 669, 2012
1. High-z massive clusters and Vector Dark Energy.
   E. Carlesi, A. Knebe, G. Yepes, S. Gottlöber, A. Maroto, J. Beltran.
   MNRAS 418, 2715, 2011