

# Curriculum Vitae

## PERSONAL INFORMATION

Name and surname **Marin Karuza**  
Academic title docent  
Year and institution of PhD obtained 2007, Sveučilište u Trstu  
Address Viškovo 142, 51216 Viškovo  
Phone +38551584611  
Fax  
E-mail mkaruza@uniri.hr  
Personal web page  
Citizenship Hrvatsko  
Date and place of birth 11.09.1973, Zagreb

## WORK EXPERIENCE<sup>1</sup> (CHRONOLOGICALLY\*)

Date (from – until) 2012 -  
Institution Sveučilište u Rijeci  
Position docent  
Work field *Opća i klasična fizika*

## EDUCATION<sup>2</sup> (CHRONOLOGICALLY)

Date *02.04.2007.*  
Place *Trst, Italija*  
Institution *Sveučilište u Trstu*  
Title of qualification awarded PhD  
Date 23.07.2003.  
Place Trst, Italija  
Institution Sveučilište u Trstu  
Title of qualification awarded dottore  
Date 1992  
Place Rijeka, Hrvatska  
Institution Gimnazija "Andrija Mohorovicic"  
Title of qualification awarded Laborant u fizici

## TRAINING (CHRONOLOGICALLY)

Year *2009 - 2012*  
Place *Camerino, Italija*  
Institution *Odjel za fiziku, Škola znanosti I tehnologije, Sveučilište u Camerinu*  
Subject and skills covered *Optomehanika, Kvantna optika*  
Year *2007 - 2009*  
Place *Trst Italija*  
Institution *Istituto Nazionale di Fisica Nucleare (INFN)*  
Subject and skills covered *Optika, Astročestična fizika*

<sup>1,2,3</sup> Please add rows to enter all required information

\* all information in the document should be entered chronologically – from the most recent to the oldest

<sup>2</sup>

**LANGUAGES**

<b>MOTHER TONGUE</b>	<b>Hrvatski</b>
<b>ENGLISH LANGUAGE</b>	<b>Arels certificate</b>
Speaking	<b>odlično</b>
Writing	<b>odlično</b>
Reading	<b>odlično</b>

**OTHER FOREIGN LANGUAGES<sup>3</sup>**

Language	<b>Talijanski</b>
Speaking	odlično
Writing	odlično
Reading	odlično
Language	<b>Njemački</b>
Speaking	dobro
Writing	dobro
Reading	dobro
Language	<b>Francuski</b>
Speaking	dovoljno
Writing	dovoljno
Reading	dobro

**RESEARCH AND OTHER PROJECTS**

(CHRONOLOGICALLY; LEADER AND ASSOCIATES; FUNDING SOURCE)

2013 -GMINUS2, INFN, Associate  
 2012 -KWISP, INFN, Co - author  
 2009 – 2011 MINOS, EU FP7, Associate  
 2008 – 2011 BARBE\_LT, INFN, Co - author  
 2009 – 2010 RD10, INFN, Co - author  
 2008 – 2011 CAST, CERN, Associate  
 2007 "Realizzazione di un campione per la taratura di Autovelox su banco ottico" , program "Giovanni Ricercatori 2007" University of Trieste. Co - author  
 2003 – 2009 PVLAS, INFN, Associate

**TEACHING**

(CHRONOLOGICALLY; UNDERGRADUATE, GRADUATE , POSTGRADUATE STUDY PROGRAMMES)

2012 - Kolegiji Fizika i Fizika II na Pomorskom fakultetu, Fizika I i II na Odjelu za Informatiku, Napredna Elektrodinamika, Eksperimentalne metode u Fizici I, Praktikum iz strukture tvari te Elektronika na Odjelu za Fiziku, sve na Sveučilištu u Rijeci  
 naslovni docent na Arhitektonskom fakultetu, Sveučilište u Trstu  
 2009 – naslovni docent Arhitektonski fakultet, Sveučilište u Trstu, Laboratorij znanstvene kulture  
 2005 – 2009 asistent na Arhitektonskom fakultetu, Sveučilište u Trstu, kolegiji Fizika I i II

**MENTORSHIP OF DEFENDED DOCTORAL AND MASTER DISSERTATIONS  
AND TRAINING OF YOUNG RESEARCHERS AND SCIENTISTS**

(CHRONOLOGICALLY)

Laurea magistralis, Luca Marconi "Tecniche di retroazione per raffreddamento ottico di un oscillatore micromeccanico", 20/S, 2009 – 2010  
 Bachelor thesis, Pierigiaco Zucconi Galli Fonseca "Caraterizzazione di un interferometro di Michelson per misure di precisione", class 25, 2008 - 2009

**VISITS TO FOREIGN RESEARCH AND EDUCATION INSTITUTIONS**

(CHRONOLOGICALLY; ONLY VISITS LONGER THAN 3 MONTHS)

**AWARDS AND RECOGNITIONS**

(CHRONOLOGICALLY)

**ORGANIZATIONAL SKILLS AND COMPETENCES**

(CHRONOLOGICALLY; ORGANIZATION OF HOME AND INTERNATIONAL SCIENCE EVENTS)

Rijaka's Physics School, 2013, 2014  
PVLAS Day, Trieste, October 3rd 2006

**MEMBERSHIP IN SCIENCE ORGANIZATIONS AND BODIES**

(CHRONOLOGICALLY; HOME AND INTERNATIONAL ORGANIZATIONS AND BODIES)

2009, ET (Einstein Telescope) scientific group

**COMMISSIONS, COMMITTEES, BOARDS AND WORK GROUPS**

(CHRONOLOGICALLY; HOME AND INTERNATIONAL)

- [17] Karuza, M.; Biancofiore, C.; Bawaj, M.; et al.  
Optomechanically induced transparency in a membrane-in-the-middle setup at room temperature  
Phys. Rev. A Vol: 88 (2013) 013804
- [16] M. Karuza, C. Molinelli, M. Galassi, C. Biancofiore, R. Natali, P. Tombesi, G. Di Giuseppe, D. Vitali  
Optomechanical sideband cooling of a thin membrane within a cavity  
New J. Phys. 14 (2012) 095015.
- [15] M. Arik, S. Aune, K. Barth, A. Belov, S. Borghi, H. Brauninger, G. Cantatore, J. M. Carmona, S. A. Cetin, J. I. Collar, T. Dafni, M. Davenport, C. Eleftheriadis, N. Elias, C. Ezer, G. Fanourakis, E. Ferrer-Ribas, P. Friedrich, J. Galan, J. A. Garcia, A. Gardikiotis, E. N. Gazis, T. Gerasis, I. Giomataris, S. Gninenko, H. Gomez, E. Gruber, T. Guthorl, R. Hartmann, F. Haug, M. D. Hasinoff, D. H. H. Hoffmann, F. J. Iguaz, I. G. Irastorza, J. Jacoby, K. Jakovcic, M. Karuza, K. Konigsmann, R. Kotthaus, M. Krcmar, M. Kuster, B. Lakic, J. M. Laurent, A. Liolios, A. Ljubcic, V. Lozza, G. Lutz, G. Luzon, J. Morales, T. Niinikoski, A. Nordt, T. Papaevangelou, M. J. Pivovarov, G. Raffelt, T. Rashba, H. Riege, A. Rodriguez, M. Rosu, J. Ruz, I. Savvidis, P. S. Silva, S. K. Solanki, L. Stewart, A. Tomas, M. Tsagri, K. van Bibber, T. Vafeiadis, J. A. Villar, J. K. Vogel, S. C. Yildiz, and K. Zioutas  
Search for Sub-eV Mass Solar Axions by the CERN Axion Solar Telescope with 3 He Buffer Gas  
Phys. Rev. Lett. 107, 261302, Dec. 2011
- [14] C. Biancofiore, M. Karuza, M. Galassi, R. Natali, P. Tombesi, G. Di Giuseppe, and D. Vitali  
Quantum dynamics of an optical cavity coupled with a thin semi-transparent membrane: effect of membrane absorption  
Phys. Rev. A 84, 033814, Sept. 2011, 0 citations
- [13] G. Cantatore, M. Karuza, V. Lozza, and G. Raiteri  
Search for solar Axion Like Particles in the low energy range at CAST  
Nucl. Instr. and Meth. in Phys. Res. Section A, Volume 617, Issues 1-3, Page 502, May 2010 (Proc. Suppl.), 0 citations
- [12] M. Bregant, G. Cantatore, S. Carusotto, R. Cimino, F. Della Valle, G. Di Domenico, U. Gastaldi, M. Karuza, V. Lozza, E. Milotti, E. Polacco, G. Raiteri, G. Ruoso, E. Zavattini, G. Zavattini  
Erratum to 'Measurement of the Cotton-Mouton effect in krypton and xenon at 1064 nm with the PVLAS apparatus' [Chem. Phys. Lett. 392 (2004) 276] and 'A precise measurement of the Cotton-Mouton effect in neon' [Chem. Phys. Lett. 410 (2005) 288]  
Chemical Physics Letters, Vol. 477, page 415, August 2009, 0 citations
- [11] M. Bregant, G. Cantatore, S. Carusotto, R. Cimino, F. Della Valle, G. Di Domenico, U. Gastaldi, M. Karuza, V. Lozza, E. Milotti, E. Polacco, G. Raiteri, G. Ruoso, E. Zavattini, and G. Zavattini  
New precise measurement of the Cotton-Mouton effect in helium  
Chemical Physics Letters, Vol. 471, page 322, February 2009, 4 citations
- [10] M. Bregant, G. Cantatore, S. Carusotto, R. Cimino, F. Della Valle, G. Di Domenico, U. Gastaldi, M. Karuza, V. Lozza, E. Milotti, E. Polacco, G. Raiteri, G. Ruoso, E. Zavattini, and G. Zavattini  
Limits on Low Energy Photon-Photon Scattering from an Experiment on Magnetic Vacuum Birefringence  
Phys. Rev. D ,Vol.78, No.3, August 2008, 10 citations

- [9] E. Zavattini, G. Zavattini, G. Ruoso, G. Raiteri, E. Polacco, E. Milotti, V. Lozza, M. Karuza, U. Gastaldi, G. Di Domenico, F. Della Valle, R. Cimino, S. Carusotto, G. Cantatore, and M. Bregant  
New PVLAS results and limits on magnetically induced optical rotation and ellipticity in vacuum  
Phys. Rev. D, Vol. 77, 032006, February 2008, 55 citations
- [8] Giovanni Cantatore and the PVLAS Collaboration  
PVLAS Collaboration: G. Di Domenico, G. Zavattini, R. Cimino, U. Gastaldi, G. Ruoso, S. Carusotto, E. Polacco, M. Bregant, F. Della Valle, M. Karuza, E. Milotti, G. Raiteri, E. Zavattini  
Recent Results from the PVLAS Experiment on the Magnetized Vacuum, in Axions. Theory, Cosmology, and Experimental Searches  
M. Kuster, G. Raffelt, B. Beltrán editors, Lect. Notes Phys. 741, 157, 2008
- [7] E. Zavattini, G. Zavattini, P. Temnikov, G. Ruoso, G. Raiteri, E. Polacco, E. Milotti, M. Karuza, U. Gastaldi, G. Di Domenico, F. Della Valle, R. Cimino, S. Carusotto, G. Cantatore, M. Bregant  
Experimental observation of vacuum birefringence,  
Nucl. Phys. B (Proc. Suppl.), Vol. 174, Pag. 233, December 2007
- [6] E. Zavattini, G. Zavattini, G. Ruoso, E. Polacco, E. Milotti, M. Karuza, U. Gastaldi, G. Di Domenico, F. Della Valle, R. Cimino, S. Carusotto, G. Cantatore, and M. Bregant  
Editorial Note: Experimental Observation of Optical Rotation Generated in Vacuum by a Magnetic Field [Phys. Rev. Lett. 96, 110406 (2006)]  
Physical Review Letters, Vol 99, page 129901, Sept. 2007, 13 citations
- [5] E. Zavattini, G. Zavattini, G. Ruoso, E. Polacco, E. Milotti, M. Karuza, U. Gastaldi, G. Di Domenico, F. Della Valle, R. Cimino, S. Carusotto, G. Cantatore, M. Bregant,  
PVLAS: probing vacuum with polarized light  
Nucl. Phys. B (Proc. Suppl.) Vol. 164, Pag 264, January 2007
- [4] G. Zavattini, G. Cantatore, R. Cimino, G. Di Domenico, F. Della Valle, M. Karuza, E. Milotti, G. Ruoso  
On measuring birefringences and dichroisms using Fabry - Perot cavities  
Applied Physics B: Lasers and Optics, Pages 1 – 7, May 2006, 5 citations
- [3] E. Zavattini, G. Zavattini, G. Ruoso, E. Polacco, E. Milotti, M. Karuza, U. Gastaldi, G. Di Domenico, F. Della Valle, R. Cimino, S. Carusotto, G. Cantatore and M. Bregant  
Experimental Observation of Optical Rotation Generated in Vacuum by a Magnetic Field  
Physical Review Letters, Vol 96, page 110406, March 2006, 183 citations
- [2] M. Bregant, G. Cantatore, S. Carusotto, R. Cimino, F. Della Valle, G. Di Domenico, U. Gastaldi, M. Karuza, E. Milotti, E. Polacco, G. Ruoso, E. Zavattini, G. Zavattini  
A precise measurement of the Cotton Mouton effect in neon  
Chemical Physics Letters, Vol. 410, page 288, Amsterdam, June 2005, 12 citations
- [1] M. Bregant, G. Cantatore, S. Carusotto, R. Cimino, F. Della Valle, G. Di Domenico, U. Gastaldi, M. Karuza, E. Milotti, E. Polacco, G. Ruoso, E. Zavattini, G. Zavattini  
Measurement of the Cotton Mouton effect in krypton and xenon at 1064 nm with the PVLAS apparatus  
Chemical Physics Letters, Vol. 392, page 376, Amsterdam, June 2004, 13 citations

- [8] M. Karuza, C. Biancofiore, M. Galassi, R. Natali, G. Di Giuseppe, P. Tombesi, D. Vitali, "Quantum dynamics of a vibrational mode of a membrane within an optical cavity", in "Quantum Communication, Measurement and Computing (QCMC) - The Tenth International Conference", edited by T. Ralph, P. K. Lam, AIP Conference Proceedings 1363, pag. 361-366 (2011)  
doi:10.1063/1.3630212
- [7] 5th Patras Workshop on Axions, WIMPs and WISPs, "Search for Solar ALPs in the Low Energy range at CAST", Durham, UK, 13-17 July 2009, J.Jaeckel, A. Lindner and J. Redondo ed.
- [6] XII International Workshop on "Neutrino Telescopes", Venezia, Italia, 6-9 marzo 2007, "PVLAS", in XII International Workshop on "Neutrino Telescopes", M. Baldo Ceolin ed., (Papergraf, Padova, 2007), p. 373
- [5] ICHEP'06, XXXIII International Conference on High Energy Physics, Moscow, Russia, 26 July- 2 August 2006, "Observation of vacuum induced birefringence induced by a transverse magnetic field", in High Energy Physics ICHEP'06. Proceedings of the 33rd International Conference, A. Sissakian, G.Kozlov & E. Kolganova ed., (World Scientific, Singapore, 2007) p. 218
- [3] 5th WSEAS International Conference on Signal Processing, Computational Geometry & Artificial Vision, Malta, 15-17 settembre 2005, "Signal Processing in the PVLAS Experiment", WSEAS Trans. Syst. 11, 1931 (2005)
- [2] XI International Workshop on "Neutrino Telescopes", Venezia, Italia, 22-25 febbraio 2005, "Experimental observation of magnetically induced linear dichroism of vacuum", in XI International Workshop on "Neutrino Telescopes", M. Baldo Ceolin ed., (Papergraf, Padova, 2005),
- [1] IDM2004, 5th International Workshop on the Identification of Dark Matter, Edinburgh (UK), 6-10 settembre 2004, "PVLAS results on laser production of axion-like dark matter candidate particles", in Proceedings of the Fifth International Workshop on the Identification of Dark Matter, N.J.C. Spooner e V. Kudryavtsev ed., (World Scientific, Singapore, 2005) p. 420

#### OTHER RESEARCH ACTIVITIES

(CHRONOLOGICALLY; CHIEF EDITOR OR EDITOR OF RESEARCH BOOK, HOME AND INTERNATIONAL RESEARCH JOURNALS, HOME AND INTERNATIONAL CONFERENCE PROCEEDINGS AND OTHER)

Review of Scientific Instruments reviewer

#### COMPUTER SKILLS

Autodesk (Autodesk, AutoCAD)  
LabView (Vision, FPGA)  
HTML  
Windows, Linux OS

#### OTHER IMPORTANT SKILLS AND COMPETENCES

VME Bus course, Hytec Electronics Ltd, Reading, UK

#### ADDITIONAL INFORMATION AND NOTES

Trainer and consultant at SESAME Synchrotron-light for Experimental Science and Applications in the Middle East, Amman, Jordan, April 2009