CURRICULUM VITAE MATTHIAS JUNKER

PERSONAL INFORMATION

Nationality: German
Date of Birth: June 17, 1966
Place of birth: Warburg (Germany)

EDUCATION

1996	PhD at Fakultät für Astronomie und Physik, Ruhr-Univerität Bochum, Germany, Nuclear Astrophysics, Title of Thesis: "Aufbau und Optimierung einer unterirdischen Beschleunigeranlage" (Setup and optimization of an underground accelerator facility) Supervisor : Prof. C. Rolfs , Co-Supervisor: Priv. Doz. H.P. Trautvetter
1992	Master in Physics at Fakultät for Physik, Westfälische Wilhelmsuniversität Münster, Germany

CURRENT POSITION

2002 –	Staff Technologist at INFN – Laboratori Nazionali del Gran Sasso, L'Aquila, Italy

PREVIOUS POSITIONS

1998 –2002	Technologist (fixed term) at INFN – Laboratori Nayionali del Gran Sasso, L'Aquila, Italy

FELLOWSHIPS

1996-1998	INFN Fellowship for foreign researchers at Laboratori Nazionali del Gran Sasso
1994-1995	ECC Grant "Human Capital and Mobility" Contract Nr. ERBCHBGCT920183 Proposal Nr ERB4050PL920217"

SUPERVISION OF GRADUATE STUDENTS AND POSTOCTORAL FELLOWS

2013 –	1 Phd Student, Gran Sasso Science Institute (GSSI), Physics Research Area
2013 --	1 Post Doc Fellow, INFN, Laboratori Nazionali del Gran Sasso
2000 – 2001	1 Master student, Facoltà di Scienze Matematiche, Fisiche e Naturali, Università degli Studi di Milano,

TEACHING ACTIVITIES

2014 – 2015	Co-tutoring of Civil Engineering fellow in the context of the POR Abruzzo
2000 –	Introduction to low energy accelerator physics and operations, hands on lectures devoted to 30 Master and PhD Students operating the LUNA 400 Accelerator at LNGS
2014	Tutor of two Erasmus students from Eötvös Loránd University, Budapest.
2013	Lecture on 7th European Summer School on Experimental Nuclear Astrophysics", Santa Tecla, Catania, Italy
2012	Lecture on 24th Carpathian Summer School of Physics, Sinaia, Romania.

2007 Lecture on 22nd Carpathian Summer School of Physics, Sinaia, Romania.

2003 Lecture on 2nd European Summer School on Experimental Nuclear Astrophysics", Santa Tecla, Catania, Italy

2002 Lecture on International School of Physics Enrico Fermi on Neutrino Physics, Societä di Fisica Italiana (SIF) Varenna,Italy.

1995 Presentation in Physik Kolloquium, Physik Department, Technische Univerität München (TUM), Germany

ORGANIZATION OF SCIENTIFIC MEETING

2014 Gran Sasso Summer Institute 2014, Hands-On Experimental Underground Physics at LNGS, September 22 – October 03, 2014, Assergi (Italy), 26 participants - 6 Italy, 6 USA, 4 Spain, 2 Chine, 1 Sweden, 1 Switzerland, 1 Germany, 2 India, 1 Poland, 1 Japan, 1 Korea – selected out of 82 applications, Member of Local Organizing Committee

2013 Workshop "Starting up the LUNA MV Collaboration", February 6-8, 2013, Assergi, Italy, 60 participants, Member of Local Organizing Committee

2011 Round Table "LUNA-MV at LNGS", February, 10-11 2011, Assergi (Italy), 35 partecipants, Member of Local Organizing Committee

2010 "International Student Workshop on Neutrinoless Double Beta Decay", 56 partecipants, November 11 – 13, 2010, Assergi, (Italiy), Member of Local Organizing Committee

2010 "Claro", Event to celebrate the Hans A. Bethe Prize assigned to Claus Rolfs by the American Physical Society (APS), June 9, 2010, Assergi (Italy), 50 partecipants, Member of Local Organizing Committee

2009 "Nuclear Physics in Astrophysics IV", XXII International Physics Divisional Conference of the European Physical Society, June 8-12, 2009, Frascati (Italy), 100 participants, Member of Local Organizing Committee, Responsibility on budget,

INSTITUTIONAL RESPONSIBILITIES

2015 - Buyer's production responsible (Direttore Esecuzione Contratto) of the of the accelerator LUNA-MV, a 3.5 MV single ended electrostatic accelerator to be installed inside the underground laboratories of LNGS

2014 – 2015 Responsible designer (Progettista) of the accelerator LUNA-MV

2015 L2 responsible in the LUNA-MV project. Area of responsibility: "Scientific Instrumentation for LUNA-MV: Accelerator, beam lines, targets, detectors, DAQ".

2013 – Representative of the Technologist in the Laboratory Council of LNGS.

2012 – 2014 Technical coordinator, GLIMOS and RAE of the Premium Project "LUNA-MV".

2009 – Group Leader of the LUNA group at LNGS

2004 – 2015 Group leader of the GERDA group at LNGS
Member of the Collaboration Board and of the Program Management Group of the GERDA Collaboration

2004 – Responsible for the "Common Funds" of the GERDA Collaboration.
Coordinator of the Task Group "TG 8 Infrastrutture e Logistica" of the GERDA

Collaboration.
Member of the Collaboration Board of the LUNA Collaboration.

2004 – 2009 Coordinator of the design, engineering and construction and acceptance test of the GERDA Super structure at LNGS
Coordinator of the seismic analysis of the full GERDA installation of LNGS (building, water vessel, cryostat)

2001 – Technical responsible and coordinator of data taking at the accelerator LUNA II
Group Leader in Matter of Safety (GLIMOS) of the LUNA Collaboration.
Reference person in matter of environment (RAE) of the LUNA Collaboration

2000 Supervision of the construction and acceptance of the accelerator LUNA II 400kV in collaboration with the responsible for radio-protection at LNGS and with the Prevention and Protection service of LNGS

1999 Coordination of the construction of the general infrastructure need for the installation of the accelerator LUNA II 400kV

1994 – 1999 Coordination of data taking and analysis of the measurements of the reaction $^{3}He(^{3}He,2p)^{4}He$ at solar energies

ADMINISTRATIVE RESPONSIBILITIES / RESPONSABILITÀ AMMINISTRATIVE

2009 – 2016 Incarico di Responsabile Unico di Procedimento (RUP) relativamente alle acquisizioni in economia di beni e servizi per GERDA_CF, LUNA e LUNA_MV.

COMMISSIONS OF TRUST

2014 – Member of the International Advisory Comity (IAC) of the Jinping Underground Nuclear Astrophysics project JUNA.

2012 – 2013 DIANA NSF Proposal Read Committee, University of Notre Dame, IN, USA.

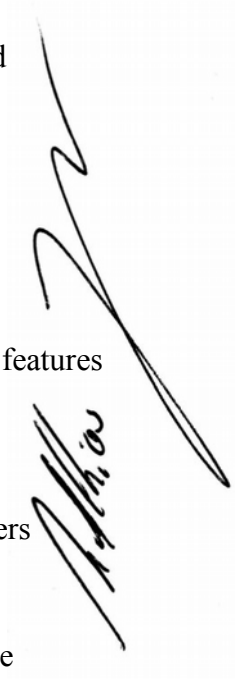
2011 Member of SNO+ Review Committee of the Natural Sciences and Engineering Research Council of Canada

OUTREACH

1999 – Collaboration to the LNGS outreach department for production of radio and TV features on research at LNGS,

2014 Sharper, European Reserchers' night, September 26, 2014, L'Aquila, 13.000 participants, Coordinator of the initiative “Across the Border” proposing video connection in public viewing betweem L'Aquila and five different research centers worldwide.

2010 Inauguration of the GERDA experiment, November 9, 2010, Assergi, Italy, 30 international journalists partecipating, Member of the local organizing committee



MEMBERSHIPS OF SCIENTIFIC SOCIETIES

Deutsche Physikalische Gesellschaft (DPG)

MAJOR COLLABORATIONS

LUNA – Collaboration (Laboratory for Underground Nuclear Astrophysics), Nuclear Astrophysics at the underground accelerator facility at Laboratory Nazionali del Gran Sasso

GERDA – Collaboration (Germanium Detector Array), Research on Neutrinoless Double Beta Decay with ^{76}Ge Detectors

BIBLIOGRAPHY

1. NUCLEAR PHYSICS IN ASTROPHYSICS IV (NPAIV 2009) Book Series: **Journal of Physics Conference Series** Volume: 202, Edited by: Formicola, A; Gustavino, C; Junker, M
2. G. Gervino, **Ultra-sensitive gamma-ray spectroscopy set-up for investigating primordial lithium problem, Nucl. Inst. Meth. in Phys. Res. A 824** (2016)
3. A. Best *Low energy neutron background in deep underground laboratories,* **Nucl. Inst. Meth. in Phys. Res. A 812:***1*
4. Junker M. *Experiences and Prospects of Nuclear Astrophysics in Underground Laboratories,* **J Phys. Conf. Ser. 665:***012029* **(2016)**
5. Cavanna, F et al. (LUNA Collaboration), *Three New Low-Energy Resonances in the Ne-22(p,gamma)Na-23 Reaction* **Phys. Rev. Lett. 115:***252501* **(2015)**
6. Agostini, M et al. *2 nu beta beta decay of Ge-76 into excited states with GERDA phase I*, **J. Phys. G Nucl. Part. 42:***15201* **(2015)**
7. Agostini, M et al. *LArGe: active background suppression using argon scintillation for the GERDA 0 nu beta beta-experiment,* **Eur. Phys. J. C 75:***605* **(2015)**
8. Agostini, A et al. *Results on beta beta decay with emission of two neutrinos or Majorons in Ge-76 from GERDA Phase I,* **Eur. Phys. J. C 75:** *416* **(2015)**
9. Bruno, C G et al.(LUNA Collaboration), *Resonance strengths in the O-17,O-18(p, alpha)N-14,N-15 reactions and background suppression underground Commissioning of a new setup for charged-particle detection at LUNA,* **Eur. Phys. J. A 51:***94* **(2015)**
10. M. Agostini et al. (GERDA Collaboration), *Improvement of the energy resolution via an optimized digital signal processing in GERDA Phase I,* **Eur. Phys. J. C, 75:***255* **(2015)**
11. C.G. Bruno, D.A. Scott, A. Formicola et al. (LUNA Collaboration), *Resonance strengths in the $^{17,18}O(p,\alpha)^{14,15}N$ reactions and background suppression underground – Commissioning of a new setup for charged-particle detection at LUNA,* **Eur. Phys. J. A, 51:***94* **(2015)**
12. M. Agostini et al. /GERDA Collaboration), *Production, characterization and operation of 76 Ge enriched BEGe detectors in GERDA,* **Eur. Phys. J. A, 75:***39* **(2015)**
13. Anders, M., Trezzi, D., Menegazzo, R., ed al., *First direct measurement of the $^{2}H(\alpha,\gamma)^{6}Li$ cross section at big bang energies and the primordial lithium problem*, **Physical Review Letters**, 113 (4), *042501* (2014)
14. Formicola, A., Bruno, C.G., Caciolli, ed al., *Cross-section measurements at astrophysically relevant energies: The LUNA experiment*, **Nuclear Instruments and Methods in Physics Research A**, 742, *258* (2014)
15. Di Leva, A., Scott, D.A., Caciolli, ed al., *Underground study of the $^{17}O(p,\gamma)$ ^{18}F reaction relevant for explosive hydrogen burning*, **Physical Review C**, 89 (1) *015803* (2014) Erratum: **Physical Review C**, 90 (1), *019902* (2014)
16. Agostini, M.ed al., *The background in the 0νββ experiment Gerda*, **European Physical Journal C**, 74 (4), *1-25* (2014)
17. Junker, M. *Experiences and prospects of nuclear astrophysics in underground laboratories,* **AIP Conference Proceedings**, 1595, *138-143* (2014)
18. Agostini, M.ed al.,.*Pulse shape discrimination for Gerda Phase I data*, **European Physical**

Journal C, 73 (10), *1-17* (2013)
19. Agostini, M. ed al., *Results on neutrinoless double-β decay of Ge76 from phase i of the GERDA experiment,* **Physical Review Letters**, 111(12), 122503 (2013)
20. Anders, M., Trezzi, D., Bellini ed al., *Neutron-induced background by an α-beam incident on a deuterium gas target and its implications for the study of the $^{2}H(\alpha,\gamma)^{6}Li$ reaction at LUNA,* **European Physical Journal A**, 49 (2), *1-13* (2013)
21. Ackermann, K.-H. ed al., *The Gerda experiment for the search of 0νββ decay in ^{76}Ge*, **European Physical Journal C**, 73 (3), *1-29* (2013) .
22. Agostini, M.ed al., *Measurement of the half-life of the two-neutrino double beta decay of ^{76}Ge with the GERDA experiment*, **Journal of Physics G**, 40 (3), *035110*, (2013)
23. Scott, D.A., Caciolli, A., Di Leva, A ed al., *First direct measurement of the $^{17}O(p,\gamma)^{18}F$ reaction cross section at Gamow energies for classical novae,* Physical Review Letters, *109* (20), 202501, (2012)
24. Agostini, M. ed al., *LArGe R&D for active background suppression in Gerda,* **Journal of Physics: Conference Series**, 375, *042009*, (2012)
25. D'Andragora, ed al., *Spectroscopic performances of the GERDA cryogenic charge sensitive amplifier based on JFET-CMOS ASIC, coupled to germanium detector,* **IEEE Nuclear Science Symposium Conference Record**, 5401678, *396-400*, (2009)
26. Dawson, J.V. ed al., *Experimental study of double- decay modes using a CdZnTe detector array* **Physical Review C,** 80 (2), *025502* (2009)
27. Dawson, J.V., ed al., *An investigation into the ^{113}Cd beta decay spectrum using a CdZnTe array* **Nuclear Physics A**, 818 (3-4), 264-278 (2009)
28. Junker, M. *Underground nuclear astrophysics at LUNA,* **AIP Conference Proceedings**, 972, 249-257 (2008)
29. Bloxham, T ed al., *First results on double β-decay modes of Cd, Te, and Zn Isotopes,* **Physical Review C,** 76 (2), *025501* (2007)
30. Cattadori, C. ed al., *The GERmanium Detector Array read-out: Status and developments,* **Nuclear Instruments and Methods in Physics Research, Section A**: *479-480* (2007)
31. Schönert, S. ed al., *Status of the Germanium Detector Array (GERDA) in the search of neutrinoless ββ decays of 76Ge at LNGS,* **Physics of Atomic Nuclei**, 69 (12), *2101-2108*. (2006)
32. Goessling, C. ed al., *Experimental study of ^{113}Cd β decay using CdZnTe detectors,* **Physical Review C**, 72 (6), *064328* (2005)
33. Schönert, S.ed al., *The GERmanium Detector Array (Gerda) for the search of neutrinoless ββ decays of 76Ge at LNGS,* **Nuclear Physics B - Proceedings Supplements**, 145, *242-245*. (2005)
34. Junker, M., *Advances in cross-section measurements with undeground accelerators,* **Nuclear Physics B - Proceedings Supplements**, 110, *247-253* (2002)
35. Junker, M., *Present status and future prospects of underground nuclear astrophysics,* **Nuovo Cimento della Societa Italiana di Fisica A**, *111* (8-9), 1061-1066 (1998)