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Center of excellence for Advanced Materials and Sensing Devices  
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Croatia  
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## CURRICULUM VITAE

**Born:** 1965. Zagreb, Croatia

### **Education:**

1984. October *University:* Enrolled in the undergraduate BS program in Physical Sciences at the Faculty of Natural sciences and Mathematics of the University of Zagreb;
1991. January *BS:* Received BS degree in theoretical nuclear physics on the theme of physics of the Solar neutrinos
1992. *Postgraduate study:* PhD scholarship at the French institute for particle physics Laboratoire d'Annecy-le-Vieux de Physique des Particules (LAPP) for work on CERN's experiment ATLAS;
1994. May 19. Defended PhD thesis under the title: "A Study of a Hadronic Liquid Argon Calorimeter Prototype for an LHC Experiment: Testing in the Beam and Optimization of Energy Resolution by Means of a Weighting Method", L'Universite de Savoie, Chambéry, France.

### **Major scholarships:**

- 1986.-1991. I was receiving a scholarship from the Ruđer Bošković Institute (RBI) starting from the junior year of my undergraduate studies
- 1992.-1994. 2-year PhD scholarship from French government (CNRS/ IN2P3)
- 1994.-1999. Multiple combined scholarships from CERN, Croatian Ministry of science and technology and RBI for the post doctoral research on neutrino oscillation experiment NOMAD.
- 2010.-2011. Fulbright scholarship at University of California at Santa Barbara (host Dirk Bouwmeester), for work on quantum logic gates and random number generators.

### **Publications:**

Author or co-author of over 80 scientific articles in publications cited in the Current Contents and 17 expert articles in the field of electronics, informatics and physics, most of which have been published in international journals. Inventor of 2 patents and 1 patent application. Citations: >1660; h-factor: 22; RG Score: 44.12.

### **Refereeing:**

A referee for scientific articles for the journals: **Light: Science & Applications** (Nature Publishing Group), **Optics Letters** (OSA), **Optics Express** (OSA), **Optics Communications** (Elsevier), **Journal of Modern Optics** (Taylor & Francis), **Journal of Lightwave Technology** (IEEE), **IEEE Photonics Technology Letters** (IEEE), **Optical Engineering** (IEEE), **Mod. Phys. Lett. B** (World Scientific), **Review of Scientific Instruments** (AIP), **Chinese Optics Letters** (Zhongguo Kexue Zazhise/Science in China Press), **British Journal of Mathematics & Computer Science** (SCIENCEDOMAIN international), **FIZIKA**

(Croatian Physical Society - HFD), and for Scientific projects of the Ministry of Science Education and Sports of Croatia. Referee for cryptographic papers since 2006 for the **MIPRO** IEEE Information Systems Security section, Croatia, International annual conference.

### **Professional advances and professional experience:**

1991.-1994. "Research Assistant" at the RBI, Zagreb, Croatia  
1991.- Active member of the international collaboration NOMAD at CERN, Geneve, **Switzerland**. Participated in preliminary tests important for the proof of concept.  
1992.-1994. "Visiting scientist" at L.A.P.P. Annecy, **France**  
19.05.1994. PhD physics at the Universite de Savoie, Chambéry, **France**  
1994.-2001. Postdoctoral studies, participation in the following experiments: NOMAD, NOMAD-STAR, OPERA at CERN, Geneve, **Switzerland**  
20.02.1998. "Senior assistant", at the RBI, Zagreb, **Croatia**  
10.1999. Completion of the Advanced Technology Course "Cryptography: fundamentals and applications", Engelberg, **Switzerland**  
16.07.2002. "Scientific Associate", at the RBI, Zagreb, **Croatia**  
09.12.2005. "Senior Scientific Associate", at the RBI, Zagreb, **Croatia**  
04.11.2010.-04.11.2011. Visiting Project Scientist, Physics Dept. UC Santa Barbara, **USA**  
04.11.2011.-31.12.2012. "Project Scientist", Electrical and Computer Engineering Dept. UC Santa Barbara, **USA**

### **Duties at the RBI Institute:**

2014- Leader of Photonics and quantum optics research unit of Centre of excellence for advanced materials and sensing devices (CEMS).  
2013-2016 A member of the Intellectual Property Comitee of RBI  
2010-2011 A member of the Intellectual Property Comitee of RBI  
2003 Webmaster of Department of Experimental Physics.  
2005 Leader of the task Group for writing the Rules and regulations act for intellectual property at RBI  
2001-2015 CARNet (Croatian Academic and Research Network) coordinator.  
2001-2007 A member of the Committee for computers and communication.  
2001-2003 A member of Body for control and supervision of process of building of the institute-wide optical gigabit computer network.  
1999 Leader of the pilot project the Group for building the first cluster computer at the RBI

### **Grants & Project leaderships:**

2016-2017 **Leader** of the OeAD project of Croatian-Austrian collaboration "**Quantum entanglement for ultra-secure communications**", C# 533-19-16-0002  
2014-present **Head** of the **Photonics and Quantum Optics Research Unit at Centre of Excellence for Advanced Materials and Sensing Devices**, RBI, Contract No. 533-19-15-0022  
2007-2010 **Leader** of the science and technology project "**Photon detector**", financed by the [Croatian Institute of Technology](#), contract date 13.11.2007.  
2007-2008 Croatian-side **leader** of the DAAD project of Croatian-German collaboration "**Experiments in quantum communication and quantum information**".  
2007-2014 **Leader** of the Scientific Project: "**Experiments in Quantum Communication and Quantum Information**" (A basic research project financed by the [Croatian Ministry of Science Education and Sports](#), No. 098-0352851-2873  
2004-2005 **Leader** of project "**Quantum Random Bit Generator**", **World Bank** grant, Technology Assistance Program TAL-2;  
2003-2004 **Leader** of information technology project "**System for secure transfer of data over the Internet using random numbers and CGI technology**", CARNet contract No. 650-103/03;  
2003-2004 **Leader** of information technology project "**Secure web server with individualized access to a database**", grant by Ministry of science

- 2002-2003 and technology of Republic of Croatia contract No. 942-11-11-2003;  
**Leader** of information technology project "**Remote control of processes and measurements via cellular telephony and the Internet**", grant by Ministry of science and technology of Republic of Croatia contract No. 353-01-10-2002;
- 1999 **Initiator and leader** of the pilot project and founder of the Group for building **the first scientific cluster computer in Croatia** at RBI;
- 1998-2002 **Leader** of the pilot project for young scientists, "**Research of neutrino oscillations at CERN**" funded by the Ministry of science and technology of Republic of Croatia, contract number. 098479;

**Collaborations with the industry:**

- 2012 **Excelitas** (Canada), testing of Photon Detector Modules
- 2011 **PicoQuant** (Germany), testing of Photon Detector Module
- 2011 **Berkeley Nucleonics** (USA), testing of Arbitrary Function Generator and Frequency meter
- 2010 **Laser Components** (Germany), testing single photon avalanche diodes
- 2007-2008 **CTI Electronics** (USA), "Study of properties and optimization of an optical joystick"
- 1999 **HD-Info** (Croatia), study of randomness of various commercial random number generators

**Awards:**

2005. Golden medal "ARCA 2005" of the Third international innovation exhibition of new ideas, products and technologies of the Zagreb International Autumn Fair 2005. for the innovation "**Quantum Random Number Generator**".
2005. Golden medal of the Salon international de inventions Geneve 2005, for the innovation "**Quantum Random Number Generator**".

**Marital status:** Married since 1997. Father of two sons and one daughter.

**Hobbies:** Electronics, computer programming, radio amateurism.

**Memberships:**

- IEEE Photonics Society (IEEE), since 2014
- American optical Society (OSA), since 2011
- Croatian Physical Society (HFD), since 1995
- CERN, 1991-2005

**Patent applications & patents:**

1. M. Stipčević, **Process and apparatus for realization of stereo coded signal**, priority date 28.06.1999., submitted to State office for intellectual property, Ulica grada Vukovara 78, Zagreb, application number: **P990203A**. Application is published in *Hrvatski glasnik intelektualnog vlasništva br. 2/2001*
2. M. Stipčević, **Apparatus and method for generating true random bits based on time integration of an electronic noise source**, priority date 17.10.2001., submitted to State office for intellectual property, Ulica grada Vukovara 78, Zagreb, application number: **P20010751A** and world-wide PCT application number: **WO03040854** - 15.05.2003., granted patent number: **HR PK20010751 B3**.
3. M. Stipčević, **Quantum random bit generator**, priority date 30.April 2004, submitted to State office for intellectual property, Ulica grada Vukovara 78, Zagreb, application number: **P20040382A** and world-wide PCT application number: **WO2005106645A2** - 10.11.2005. Granted in Croatia as **P20040382** since 06.05.2009. Now in European international phase.

### **Invited and oral lectures on international conferences:**

1. M. Stipčević, B. G. Christensen, P. G. Kwiat, and D. J. Gauthier, "Advanced active quenching circuits for single-photon avalanche photodiodes", Invited lecture, SPIE Defense and Commercial Sensing 2016, Baltimore, Maryland, USA, April 17-21, 2016.
2. M. Stipčević, "Random flip-flop and its applications," Proc 37th International Convention on Information and Communication Technology, Electronics and Microelectronics, MIPRO 2014, Opatija, Croatia, May 26-30, 2014. IEEE, pp 1387-1393.
3. D. J. Gauthier, C. F. Wildfeuer, H. Guilbert, M. Stipčević, B. Christensen, D. Kumor, P. G. Kwiat, T. Brougham, S. M. Barnett, "Quantum Key Distribution Using Hyperentangled Time-Bin States", Invited lecture, Proc. CQO X and QIM 2 2013, 17-20 June 2013, Rochester, NY, USA
4. M. Stipčević, D. J. Gauthier, "Precise Monte Carlo Simulation of Single-Photon Detectors", Oral presentation, Proc. SPIE Defense, Security and Sensing, Paper **87270K**, 29 April - 3 May 2013, Baltimore, Maryland, USA
5. M. Stipčević, "Quantum random number generators and their applications in cryptography", Invited Oral presentation, Proc. SPIE Defense, Security, and Sensing 23-27 April 2012 in Baltimore, Maryland, USA
6. M. Stipčević, "How secure is quantum cryptography ?", Proc. of the 35-th IEEE sponsored International conference MIPRO 2012, section Information Systems Security, May 21 - 25, 2012, Opatija, Croatia
7. M. Stipčević, "Quantum random number generators and their use in cryptography", appears in Proceedings of the IEEE sponsored International conference MIPRO 2011, section Information Systems Security, May 23 - 28, 2011, Opatija, Croatia
8. M. Stipčević, "New directions in quantum cryptography", Internet conference CUC 2004, 27-29 September 2004, Zagreb, Croatia
9. M. Stipčević, K. Jakovčić, "Process monitoring and control using Internet and cellular telephony", Internet conference CUC 2002, 25-27 September 2002, Zagreb, Croatia
10. M. Stipčević (for the NOMAD collaboration), "Results from NOMAD", Triangle Symposium on Particle Physics, 17-19 June 1999, Zagreb, Croatia
11. M. Stipčević, V. Paar, S. Brant, D. Vorkapić, A. Ljubičić, "<sup>205</sup>Pb in the cluster vibration model (CVM)", Thallium Neutrino Detection 1990, International Symposium on Solar Neutrino Detection with TI-205, 9-12 October 1990, Dubrovnik, Croatia

### **Selected invited seminars**

1. M. Stipčević, "Photon detectors, quantum randomness and their applications in ICT security", February 19, 2016, Seminar hosted by dr. S. Verghese at MIT Lincoln Labs, Lexington, MA, USA.
2. M. Stipčević, "Quantum random flip-flop: a novel device for digital and analog signal processing", March 10, 2015. Seminar hosted by Prof. J. E. Bowers, Electrical and computer engineering, University of California Santa Barbara, Santa Barbara, USA.
3. M. Stipčević, "Random Flip-Flop and its Applications", QI/AMO Seminar April 02, 2014, Physics Department, University of Illinois at Urbana-Champaign, Urbana, IL, USA
4. M. Stipčević, "Precise Monte Carlo Simulation of APD-based Quantum Random Number Generator", invited seminar given on May 07, 2013 Department of Physics, Duke University, Durham, NC, USA
5. M. Stipčević, "Quantum Random Number Generators and Their Applications in Cryptography", invited seminar given on July 05, 2012 at Department of Electrical and Computer Engineering, University of California Santa Barbara, Santa Barbara, CA 93106
6. M. Stipčević, "Superluminal anomaly in OPERA experiment", invited seminar given on October 26, 2011 at Department of Physics, University of California Santa Barbara, Santa Barbara, CA 93106

### **Chapters in books**

1. M. Stipčević, and Ç. K. Koç, "True Random Number Generators", in "Open Problems in Mathematics and Computational Science", Koç, Çetin Kaya (Ed.), pp 275-315 Springer 2014, ISBN 978-3-319-10683-0, URL: <http://www.springer.com/gp/book/9783319106823>

2. R. Stevanović, G. Topić, K. Skala, M. Stipčević, B. M. Rogina, "Quantum Random Bit Generator Service for Monte Carlo and Other Stochastic Simulations", Large-Scale Scientific Computing Lecture Notes in Computer Science Volume 4818, pp 508-515, Springer 2008

**Mario Stipcevic - Papers published in journals indexed in CC:**

82. M. Stipčević, "Quantum random flip-flop and its applications in random frequency synthesis and true random number generation", *Rev. Sci. Instrum.* **87**, 035113:1-9 (2016). DOI: <http://dx.doi.org/10.1063/1.4943668>
81. Agafonova, A. Aleksandrov, A. Anokhina,..., M. Stipčević, ..., OPERA Collaboration, "Discovery of tau neutrino appearance in the CNGS neutrino beam with the OPERA experiment", *Phys. Rev. Lett.* **115**, 121802 (2015).
80. N. Demoli, H. Skenderović, M. Stipčević, "Time-averaged photon-counting digital holography", *Opt. Lett.* **40**, 4245-4248 (2015), DOI: [10.1364/OL.40.004245](https://doi.org/10.1364/OL.40.004245)
79. G. Humer, M. Peev, C. Schaeff, S., M. Stipčević, R. Ursin, "A simple and robust method for estimating afterpulsing in single photon detectors", *J. Lightwave Technol.* **33**, 3098-3107 (2015), DOI: [10.1109/JLT.2015.2428053](https://doi.org/10.1109/JLT.2015.2428053)
78. Agafonova, A. Aleksandrov, A. Anokhina,..., M. Stipčević, ..., OPERA Collaboration, "Limits on muon-neutrino to tau-neutrino oscillations induced by a sterile neutrino state obtained by OPERA at the CNGS beam", *J. High Energy Phys.* **6** (2015) art. 069.
77. M. Stipčević, R. Ursin, "An On-Demand Optical Quantum Random Number Generator with In-Future Action and Ultra-Fast Response", *Scientific Reports* **5**, 10214:1-8 (2015). DOI: [10.1038/srep10214](https://doi.org/10.1038/srep10214)
76. M. Stipčević, J. Bowers, "Spatio-temporal optical random number generator", *Opt. Express* **23**, 11619-11631 (2015). DOI: [10.1364/OE.23.011619](https://doi.org/10.1364/OE.23.011619)
75. Agafonova, A. Aleksandrov, A. Anokhina,..., M. Stipčević, ..., OPERA Collaboration, "Observation of tau neutrino appearance in the CNGS beam with the OPERA experiment", *Progr. Theor. Exp. Phys.* **10** (2014) art. 101C01.
74. N. Demoli, H. Skenderović, and M. Stipčević, "Digital holography at light levels below noise using a photon-counting approach", *Opt. Lett.* **39**, 5010–5013 (2014).
73. N. Agafonova, A. Aleksandrov, A. Anokhina,..., M. Stipčević, ..., OPERA Collaboration, "Procedure for short-lived particle detection in the OPERA experiment and its application to charm decays", *Eur. Phys. J. C* **74**, 2986 (2014).
72. N. Agafonova, A. Aleksandrov, A. Anokhina,..., M. Stipčević, ..., OPERA Collaboration, "Measurement of the TeV atmospheric muon charge ratio with the complete OPERA data set", *Eur. Phys. J. C* **74**, 2933 (2014).
71. N. Agafonova, A. Aleksandrov, A. Anokhina,..., M. Stipčević, ..., OPERA Collaboration, "New results on  $\nu(\mu) \rightarrow \nu(\tau)$  appearance with the OPERA experiment in the CNGS beam", *J. High Energy Phys.* **4** (2014), art. 014:1-3.
70. N. Agafonova, A. Aleksandrov, A. Anokhina,..., M. Stipčević, ..., OPERA Collaboration, "Evidence for  $\nu(\mu) \rightarrow \nu(\tau)$  appearance in the CNGS neutrino beam with the OPERA experiment", *Phys. Rev. D* **89**, 051102 (2014).
69. M. Stipčević, D. Wang, and R. Ursin, "Characterization of a commercially available large area, high detection efficiency single-photon avalanche diode", *IEEE J. Lightwave Technol.* **31**, 3591-3596 (2013).
68. O. Samoylov, R. Petti, S. Alekhin, S., ... M. Stipčević, ..., NOMAD collaboration, "A precision measurement of charm dimuon production in neutrino interactions from the NOMAD experiment", *Nucl. Phys. B* **876**, 339-375(2013).
67. N. Agafonova, A. Aleksandrov, A. Anokhina,..., M. Stipčević, ..., OPERA Collaboration, "New results on  $\nu(\mu) \rightarrow \nu(\tau)$  appearance with the OPERA experiment in the CNGS beam", *J. High Energy Phys.* **11**(2013), art. 036:1-31.

66. N. Agafonova, A. Aleksandrov, A. Anokhina, ..., M. Stipčević, ..., OPERA Collaboration, "Search for  $\nu(\mu) \rightarrow \nu(e)$  oscillations with the OPERA experiment in the CNGS beam", *J. High Energy Phys.* **7**(2013), art. 004.
65. Adam T., Agafonova N., Aleksandrov A., ..., Stipčević M., ..., "Measurement of the neutrino velocity with the OPERA detector in the CNGS beam using the 2012 dedicated data", *J. High Energy Phys.* **1**(2013) art. 153.
64. Adam T., Agafonova N., Aleksandrov A., ..., Stipčević M., ..., "Measurement of the neutrino velocity with the OPERA detector in the CNGS beam", *J. High Energy Phys.* **10**(2012) art. 093.
63. Agafonova, N., Antonioli, P., Ashikhmin, V. V., ..., Stipčević M.; ..., "Determination of a time-shift in the OPERA set-up using high-energy horizontal muons in the LVD and OPERA detectors", *Eur. Phys. J. Plus* **127**(2012) art. 71.
62. Agafonova N., Aleksandrov A., Altinok O., ..., Stipčević M., ..., "Search for  $\nu_{\mu} \rightarrow \nu_{\tau}$  oscillation with the OPERA experiment in the CNGS beam", *New J. Phys.* **14**(2012) 033017.
61. Agafonova N., Aleksandrov A., Altinok O., ..., Stipčević M., ..., "Momentum measurement by the multiple Coulomb scattering method in the OPERA lead-emulsion target", *New J. Phys.* **14**(2012) 013026.
60. Kullenberg C.T., Mishra S.R., ..., Stipčević M., ..., "A search for single photon events in neutrino interactions", *Phys. Lett.* **B 706**(2012)268-275.
59. Bertolin A., Brugnera R., Candela A., ..., Stipčević M., ..., "Long term performances of OPERA bakelite RPC system", *Nucl. Instr. and Meth.* **A 661**(2012)S60-S63.
58. Agafonova N., Anokhina A., ..., Stipčević M., ..., "Study of neutrino interactions with the electronic detectors of the OPERA experiment", *New J. Phys.* **13**(2011)053051.
57. Stipčević M., Skenderović H., Gracin D., "Characterization of a novel avalanche photodiode for single photon detection in VIS-NIR range", *Opt. Express* **18**,17448-17459 (2010).
56. Agafonova N., Aleksandrov A., ..., Stipčević M., ..., "Observation of a first  $\nu_{\tau}$  candidate event in the OPERA experiment in the CNGS beam", *Phys. Lett.* **B 691**(2010)138-145.
55. Agafonova N., Anokhina A., ..., Stipčević M., ..., "Measurement of the atmospheric muon charge ratio with the OPERA detector", *Eur. Phys. J.* **C 67**(2010)25-37.
54. Kullenberg C.T., Mishra S.R., ..., Stipčević M., ..., "A measurement of coherent neutral pion production in neutrino neutral current interactions in the NOMAD experiment", *Phys. Lett.* **B 682**(2009)177-184.
53. Lyubushkin V., Popov B., Kim J.J., ..., Stipčević M., ..., "A study of quasi-elastic muon neutrino and antineutrino scattering in the NOMAD experiment", *Eur. Phys. J.* **C 63**(2009)355-381.
52. Acquafredda R., Adam T., Agafonova N., ..., Stipčević M., ..., "The detection of neutrino interactions in the emulsion/lead target of the OPERA experiment", *J. Instrum.* **4**(2009)P06020.
51. Bertolin A., Brugnera R., Candela A., ..., Stipčević M., ..., "The RPC system of the OPERA experiment", *Nucl. Instr. and Meth.* **A 602**(2009)631-634.
50. Bergnoli A., Bertolin A., Brugnera R., ..., Stipčević M., ..., Performances of the OPERA RPCs, *Nucl. Instr. and Meth.* **A 602**(2009)635-638.
49. Acquafredda R., Adam T., Agafonova N., ..., Stipčević M., ..., "The OPERA experiment in the CERN to Gran Sasso neutrino beam", *J. Instrum.* **4** (2009)P04018.
48. M. Stipčević, "Active quenching circuit for single-photon detection with Geiger mode avalanche photodiodes", *Appl. Opt.* **48**(2009)1705-1714.
47. A. Anokhina, S. Aoki, A. Ariga, ..., M. Stipčević, ..., "Study of the effects induced by lead on the emulsion films of the OPERA experiment", *J. Instrum.* **3**(2008) P07002.
46. A. Anokhina, S. Aoki, A. Ariga, ..., M. Stipčević, ..., "Emulsion sheet doublets as interface

- trackers for the OPERA experiment", J. Instrum. **3**(2008) P07005.
45. Samoylov O, Naumov D, Cavasinni V, ..., M. Stipčević, ..., NOMAD Collaboration, "A precise measurement of the muon neutrino-nucleon inclusive charged current cross section off an isoscalar target in the energy range 2.5-40 GeV by NOMAD", Phys. Lett. B **660**(2008)19-25
  44. M. Stipčević, B. Medved Rogina, "Quantum random number generator based on photonic emission in semiconductors", Rev. Sci. Instrum. **78**(2007)045104:1-7.
  43. Samoylov O, Naumov D, Cavasinni V, ..., M. Stipčević, ..., "Search for the exotic Theta(+) resonance in the NOMAD experiment", Eur. Phys. J. **C 49**(2007)499-510.
  42. Acquafredda R, Agafonova N, Ambrosio M, ..., M. Stipčević, ..., "First events from the CNGS neutrino beam detected in the OPERA experiment", New J. Phys. **8**(2006) art.303.
  41. Bergnoli A, Brugnera R, Candela A, ..., M. Stipčević, ..., "OPERA resistive plate chambers underground test results", Nucl. Phys. Proc. Suppl. **158**(2006)35-39.
  40. Candela A., Carrara E., D'Incecco M., ..., Stipčević M., ..., "Glass resistive plate chambers in the OPERA experiment", Nucl. Instr. and Meth. **A 581**(2007)206-208.
  39. Chukanov A, Naumov D, Popov B, ..., M. Stipčević, ..., "NOMAD Collaboration, "Production properties of  $K^*(892)(+)$ : vector mesons and their spin alignment as measured in the NOMAD experiment", Eur. Phys. J. **C 46**(2006)69-79
  38. P. A. Bergnoli, ..., M. Stipčević, "Tests of OPERA RPC detectors", IEEE T. Nucl. Sci. **52**(2005) 2963-2970.
  37. D. Naumov, ... M. Stipčević, ..., "NOMAD Collaboration, A study of strange particles produced in neutrino neutral current interactions in the NOMAD experiment", Nucl. Phys. **B 700**(2004)51-68.
  36. A. Bergnoli, ..., M. Stipčević, ..., "The quality control tests for the RPCs of the OPERA experiment", Nucl. Instr. and Meth. **A 533**(2004)203-207.
  35. R. Brugnera, ... M. Stipčević, ..., "The OPERA cosmic ray test facility at the Gran Sasso", Nucl. Instr. and Meth. **A 533**(2004)221-224.
  34. M. Stipčević, "Fast nondeterministic random bit generator based on weakly correlated physical events", Rev. Sci. Instr. **75**(2004)4442-4449. This paper has been selected for publication in the Virtual Journal of Quantum Information Vol. 4, Issue 11, November 2004
  33. P. Astier, ... M. Stipčević, ..., "Bose-Einstein Correlations in charged current neutrino-interactions in the NOMAD experiment at CERN", Nucl. Phys. **B 686**(2004)3-28.
  32. P. Astier, ... M. Stipčević, ..., "Prediction of neutrino fluxes in the NOMAD experiment", Nucl. Instr. and Meth. **A 515**(2003)800-828.
  31. P. Astier, ... M. Stipčević, ..., "Search for  $\nu_\mu \rightarrow \nu_e$  oscillations in the NOMAD experiment", Phys. Lett. **B 570**(2003)19-31.
  30. G. Barichello, ... M. Stipčević, ..., "Performance of the NOMAD-STAR detector", Nucl. Instr. and Meth. **A 506**(2003)217-237.
  29. C.E. Aalseth, ... M. Stipčević, ..., CAST Collaboration, The CERN axion solar telescope (CAST), Nucl. Phys. Proc. Suppl. **110**(2002)85-87.
  28. P. Astier, ... M. Stipčević, ..., NOMAD Collaboration, "New results on a search for a  $33.9 \text{ MeV}/c^2$  neutral particle from  $\pi^+$  decay in the NOMAD experiment", Phys. Lett B **527**(2002)23-28.
  27. P. Astier, ... M. Stipčević, ..., NOMAD Collaboration, "Study of  $D^*(+)$  production in  $\nu(\mu)$  charged current interactions in the NOMAD experiment", Phys. Lett B **526**(2002)278-286.
  26. P. Astier, ... M. Stipčević, ..., NOMAD Collaboration, "A study of strange particle production in  $\nu_\mu$  charged current interactions in the NOMAD experiment", Nucl. Phys. B **621**(2002)3-34.
  25. M. Krčmar, Z. Krečak, A. Ljubičić, M. Stipčević and D. A. Bradley, "Search for solar axions using  $^7\text{Li}$ ", Phys. Rev. D **64**(2001)115016-1-115016-4.

24. P. Astier, ... M. Stipčević, ..., NOMAD Collaboration, "Final NOMAD results on  $\nu_\mu \rightarrow \nu_\tau$  and  $\nu_e \rightarrow \nu_\tau$  oscillations including a new search for  $\nu_\tau$  appearance using hadronic tau decays", Nucl. Phys. B **611**(2001)3-39.
23. P. Astier, ... M. Stipčević, ..., NOMAD Collaboration, "A Study of Backward Going p and  $\bar{p}$  in  $\nu_\mu$  CC Interactions with the NOMAD Detector", Nucl. Phys. B **609**(2001)255-279.
22. P. Astier, ... M. Stipčević, ..., NOMAD Collaboration, "Measurement of the Antilambda Polarization in  $\nu(\mu)$  Charged Current Interactions in the NOMAD Experiment", Nucl. Phys. B **605**(2001)3-14.
21. M. Krčmar, Z. Krečak, M. Stipčević, A. Ljubičić, D. A. Bradley, "The mean-free-path of monochromatic hadronic axions", Rad. Phys. and Chem. **61**(2001)359-360.
20. P. Astier, ... M. Stipčević, ..., NOMAD Collaboration, "Inclusive production of  $r^0(770)$ ,  $f_0(980)$  and  $f_2(1270)$  mesons in  $\nu_\mu$  charged current interactions", Nucl. Phys. B **601**(2001)3-23.
19. P. Astier, ... M. Stipčević, ..., NOMAD Collaboration, "Search for heavy neutrinos mixing with tau neutrinos", Phys. Lett B **506**(2001)27-38.
18. P. Astier, ... M. Stipčević, ..., NOMAD Collaboration, "Measurement of the Lambda Polarization in  $\nu_\mu$  Charged Current Interactions in the NOMAD Experiment", Nucl. Phys. B **588**(2000)3-36.
17. P. Astier, ... M. Stipčević, ..., NOMAD Collaboration, "Neutrino Production of Opposite Sign Dimuons in the NOMAD Experiment", Phys. Lett. B **486**(2000)35-48.
16. P. Astier, ... M. Stipčević, ..., NOMAD Collaboration, "Updated Results from the  $\nu_\tau$  Appearance Search in NOMAD", Phys. Lett. B **483**(2000)387-404.
15. P. Astier, ... M. Stipčević, ..., NOMAD Collaboration, "Search for eV (pseudo)scalar penetrating particles in the SPS neutrino beam", Phys. Lett. B **479**(2000)371-380.
14. P. Astier, ... M. Stipčević, ..., NOMAD Collaboration, "Limit on  $\nu_\mu \rightarrow \nu_\tau$  Oscillations from the NOMAD Experiment", Phys. Lett. B **471**(2000)406-410.
13. P. Astier, ... M. Stipčević, ..., NOMAD Collaboration, "A More Sensitive Search for  $\nu_\mu \rightarrow \nu_\tau$  Oscillations in NOMAD", Phys. Lett. B **453**(1999)169-186.
12. J. Altegoer, ... M. Stipčević, ..., NOMAD Collaboration, "Precision Measurement of Scaled Momentum, Charged Multiplicity and Thrust in  $\nu_\mu N$  and (anti- $\nu_\mu$ )N Interactions", Phys. Lett. B **445**(1999)439-448.
11. G. Barichello, ... M. Stipčević, ..., "A  $B_4C$ -silicon target for the detection of neutrino interactions", Nucl. Instr. and Meth. A **419**(1998)1-15.
10. M. Krčmar, Z. Krečak, M. Stipčević, A. Ljubičić, D. A. Bradley, "Search for Solar Axions Using  $^{57}\text{Fe}$ ", Phys. Lett. B **442**(1998)38-42.
9. G. Barichello, ... M. Stipčević, ..., "Performance of long modules of silicon microstrip detectors", Nucl. Instr. and Meth. A **413**(1998)17-30.
8. J. Altegoer, ... M. Stipčević, ..., NOMAD Collaboration, "A search for  $\nu_\mu$  to  $\nu_\tau$  oscillations using the NOMAD detector", Phys. Lett. B **431**(1998)219-236.
7. J. Altegoer, ... M. Stipčević, ..., NOMAD Collaboration, "Search for a new gauge boson in  $p^0$  decays", Phys. Lett. B **428**(1998)197-205.
6. J. Altegoer, ... M. Stipčević, ..., NOMAD Collaboration, "The NOMAD experiment at the CERN SPS", Nucl. Instr. and Meth. A **404**(1998)96-128.
5. D. M. Gingrich, ... M. Stipčević ..., RD3 Collaboration, "Performance of an endcap prototype of the ATLAS accordion electromagnetic calorimeter", Nucl. Instr. and Meth. A **389**(1997)398-408.
4. D. M. Gingrich, ... M. Stipčević ..., RD3 Collaboration, "Performance of a Large Scale Prototype of the ALTAS Accordion Electromagnetic Calorimeter", Nucl. Instr. and Meth. A **364**(1995)290-306.



3. D. M. Gingrich, ... M. Stipčević ..., RD3 Collaboration, "Performance of a Liquid Argon Accordion Hadronic Calorimeter Prototype", Nucl. Instr. and Meth. **A 355**(1995)295-307.
2. M. Stipčević, S. Brant, V. Paar, A. Ljubičić, "Calculation of nuclear structure of  $^{205}\text{Pb}$  relevant for the  $^{205}\text{Tl}$  solar neutrino detector", Z. Phys. **A 350**(1995)319-325.
1. D. M. Gingrich, ... M. Stipčević ..., RD3 Collaboration, "Performance of the liquid argon electromagnetic and hadronic accordion calorimeter for the LHC", Nucl. Instr. and Meth. **A 344**(1994)39-46.

Articles Nr. **7,8,9,16,23,24,27,31** are cited in SLAC Particle Data Group as references for search for axions, neutrino mixing and light bosons. Art. Nr. **36** has been chosen for special issue of Virtual Journal of Quantum Information, and Nr. **44** for reprint in Virtual Journal of Quantum Information. In June 2011, art. Nr. **44** was recognized the best in its domain by BioMedLib and also included in Labome database.

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