

Zviad Tsamalaidze

The short list of the publications

1. Manufacture and investigation of cylindrical scintillation counters of ARES spectrometer.
Prib. Tekh. Eksp. 6 (1987) 40.
2. Search for $\mu \rightarrow e^+ e^+ e^-$ - decay.
J. Phys. G: Nucl. Part. Phys. 17(1991) s57.
3. About the decay $\pi^+ \rightarrow \mu^- + 2e^+ \nu$.
Yad. fizika 54 (1991) 1298.
4. Measurement of decay $\pi^+ \rightarrow e^+ \nu e^+ e^-$.
Yad. fizika 55 (1991) 2940.
5. ARES - a spectrometer for the investigation of rare particle decays and rare nuclear Processes
NIM, 1994, v.A346, p.496.
6. About the decay $\pi^+ \rightarrow \mu^+ + e^+ e^- \nu$.
Communication of the JINR, P1--92--131, Dubna, 1992.
7. Simulation of the Process $\pi + d \rightarrow p + p$ Detection in the ARES Facility.
Communication of the JINR, P15-90-179, Dubna, 1990
8. Design commissioning and performance of the PIBETA detector at PSI.
Nucl.Instrum.Meth.A526:300-347,2004
9. Precise measurement of the Pion Axial form-factor in the $\pi^+ \rightarrow e^+ + \nu + \gamma$ decay.
Phys.Rev.Lett.93:181804,2004
10. Precise measurement of the $\pi^+ \rightarrow \pi^0 + e^+ + \nu$ branching ratio.
Phys.Rev.Lett.93:181803,2004
11. PIBETA spectrometer for investigation of rare and forbidden decays of muons and pions.
JINR-P13-2003-102, Instrum.Exp.Tech.48:168-176, 2005
Prib.Tekh.Eksp. 48 N2:39-48,2005
12. New Precise Measurement of the Pion Weak Form Factors in $\pi^+ \rightarrow e^+ \nu$ Decay.
Phys.Rev.Lett.103:051802,2009.
13. New Precise Measurement of the Pion Weak Form Factors in the Pion Radiation Decay.
Phys. Rev. Lett.103:051802,2009
14. New studies of allowed pion and muon decays
AIP Conf..Proc. 1560 (2013) 128-130
15. New results in rare allowed muon and pion decays
Int.Mod.Phys.Conf.Ser. 35 (2014) 1460437
16. Scintillator-Lucite sandwich detector for N/Gamma separation in the GeV energy region.
Nucl.Instrum.Meth.A484:118-128,2002
17. Neutral beam line to study $K_L^0 \rightarrow \pi^0 \nu \bar{\nu}$ decay at the KEK 12-GeV proton synchrotron.
Nucl.Instrum.Meth.A545:542-553,2005.
18. $K_L^0 \rightarrow \pi^0 \nu$ experiment at KEK 12-GEV PS - E391A.
Nucl.Phys.A721:449-452,2003
19. Undoped CsI calorimeter for the $K_L^0 \rightarrow \pi^0 \nu \bar{\nu}$ experiment at KEK-PS
Nucl.Instrum.Meth.A545:278-295,2005.
20. New limit on the $K_L^0 \rightarrow \pi^0 \nu$ decay rate.
Phys. Rev. D 74, 051105(R) (2006).
21. First Search for $K_L^0 \rightarrow \pi^0 \pi^0 \nu \nu$.
Phys.Rev.D76:011101, 2007.
22. Search for the Decay $K_L^0 \rightarrow \pi^0 \pi^0 \nu$.
PRL 100, 201802, (2008).
23. Barrel photon detector of the KEK $K_L^0 \rightarrow \pi^0 \nu$ experiment.
Nucl.Instrum.Meth.A 592 (2008) 261–272.
24. Search for a light pseudoscalar particle in the decay $K_L^0 \rightarrow \pi^0 \pi^0 X$.

PRL 102, 051802 (2009)

25. Experimental study of the decay $K_L \rightarrow \pi^0 \nu \bar{\nu}$
Phys.Rev.D81:072004,2010.
26. Search for the decay $K_L \rightarrow 3\gamma$
Phys.Rev.D83:031101,2011.
27. Response characteristics of GSO(Ce) crystal to intermediate-energy α -particles.
Nucl.Instrum.Meth.A 564 (2006) 324–327.
28. Magnitude factor systematics of Kalbach phenomenology for reactions emitting helium and lithium ions.
Nucl.Instrum.Meth.A 571 (2007) 743–747.
29. A new detector system for the measurement of double differential cross sections of proton-actinide reactions in the 600-MeV region.
Conference: C08-10-18, p.1021-1024
30. The NEXT-100 experiment for neutrinoless double beta decay searches (Conceptual Design Report)
NEXT Collaboration V. Alvarez *et al.* **arXiv:1106.3630**
31. SiPMs coated with TPB : coating protocol and characterization for NEXT
V. Alvarez (Valencia U., IFIC & Valencia U.) *et al.*. Jan 2012.
JINST 7 (2012) P02010
32. NEXT-100 Technical Design Report (TDR): Executive Summary
NEXT Collaboration (V. Alvarez (Valencia U., IFIC) *et al.*). Feb 2012. 35 pp.
JINST 7 (2012) T06001
33. Design and characterization of the SiPM tracking system of NEXT-DEMO, a demonstrator prototype of the NEXT-100 experiment
NEXT-100 Collaboration (V. Alvarez (Valencia U., IFIC) *et al.*). Jun 2012. 19 pp.
JINST 8 (2013) T05002
34. Radiopurity control in the NEXT-100 double beta decay experiment: procedures and initial measurements
V. Alvarez (Valencia U. & Valencia U., IFIC) *et al.*. Nov 2012. 19 pp.
JINST 8 (2013) T01002
35. Ionization and scintillation response of high-pressure xenon gas to alpha particles
NEXT Collaboration (V. Alvarez (Valencia U., IFIC) *et al.*). Nov 2012. 56 pp.
JINST 8 (2013) P05025
36. In-situ calibration of a PMT inside a scintillation detector by means of primary scintillation detection
NEXT Collaboration (V. Alvarez (Valencia U., IFIC) *et al.*). Nov 2012. 11 pp.
arXiv:1211.4409
38. Near-Intrinsic Energy Resolution for 30 to 662 keV Gamma Rays in a High Pressure Xenon Electroluminescent TPC
NEXT Collaboration (V. Alvarez (Valencia U., IFIC) *et al.*). Nov 2012. 51 pp.
Nucl.Instrum.Meth. A708 (2013) 101-114
39. Initial results of NEXT-DEMO, a large-scale prototype of the NEXT-100 experiment
NEXT Collaboration (V. Alvarez (Valencia U., IFIC) *et al.*). Nov 2012. 23 pp.
JINST 8 (2013) P04002
40. Operation and first results of the NEXT-DEMO prototype using a silicon photomultiplier tracking array
NEXT Collaboration (V. Álvarez (Valencia U. & Valencia U., IFIC) *et al.*). Jun 3, 2013. 20 pp.
JINST 8 (2013) P09011
41. Present status and future perspectives of the NEXT experiment
NEXT Collaboration (J.J. Gomez-Cadenas (Valencia U., IFIC) *et al.*). Jul 15, 2013.
Adv.High Energy Phys. 2014 (2014) 907067
42. Radiopurity control in the NEXT-100 double beta decay experiment
V. Álvarez *et al.*. 2013. 4 pp.
AIP Conf.Proc. 1549 (2013) 46-49
43. Description and commissioning of NEXT-MM prototype: first results from operation in a Xenon-Trimethylamine gas mixture
NEXT Collaboration (V. Álvarez (Valencia U. & Valencia U., IFIC) *et al.*). Nov 13, 2013. 22 pp.
JINST 9 (2014) P03010
44. Characterization of a medium size Xe/TMA TPC instrumented with microbulk Micromegas, using low-energy γ -rays

- NEXT Collaboration (V. Álvarez (Valencia U. & Valencia U., IFIC) *et al.*). Nov 14, 2013. 22 pp.
JINST 9 (2014) C04015
45. Characterisation of NEXT-DEMO using xenon $K\alpha$ X-rays
NEXT Collaboration (D. Lorca (Valencia U., IFIC & Valencia U.) *et al.*). Jul 15, 2014. 22 pp.
JINST 9 (2014) 10, P10007
46. Ionization and scintillation of nuclear recoils in gaseous xenon
NEXT Collaboration (J. Renner (LBL, Berkeley & UC, Berkeley) *et al.*). Sep 9, 2014. 13 pp.
Nucl.Instrum.Meth. A793 (2015) 62-74
47. Results of the material screening program of the NEXT experiment
NEXT Collaboration (T. Dafni (LSC, Zaragoza & Zaragoza U.) *et al.*). Nov 5, 2014. 3 pp.
Conference: C14-07-02, arXiv:1411.1222
48. Radiopurity assessment of the tracking readout for the NEXT double beta decay experiment
NEXT Collaboration (S. Cebrián (Zaragoza U.) *et al.*). Nov 5, 2014. 15 pp.
JINST 10 (2015) 05, P05006
49. An improved measurement of electron-ion recombination in high-pressure xenon gas
NEXT Collaboration (L. Serra (Valencia U., IFIC & Valencia U.) *et al.*). Dec 11, 2014. 21 pp.
JINST 10 (2015) 03, P03025
50. PMT calibration of a scintillation detector using primary scintillation
NEXT Collaboration (E.D.C. Freitas (Coimbra U.) *et al.*). 2015. 12 pp.
JINST 10 (2015) 02, C02039
51. Accurate γ and MeV-electron track reconstruction with an ultra-low diffusion Xenon/TMA TPC at 10 atm.,
NEXT Collaboration (Diego González-Díaz (Zaragoza U. & LSC, Zaragoza & CERN) *et al.*). Apr 14, 2015.
17 pp.
Nucl.Instrum.Meth. A804 (2015) 8-24
52. Radon and material radiopurity assessment for the NEXT double beta decay experiment
S. Cebrián (Zaragoza U. & LSC, Zaragoza) *et al.*. May 26, 2015. 6 pp.
AIP Conf.Proc. 1672 (2015) 060002
53. First proof of topological signature in the high pressure xenon gas TPC with electroluminescence
amplification for the NEXT experiment
NEXT Collaboration (P. Ferrario (Valencia U., IFIC) *et al.*). Jul 21, 2015. 18 pp.
JHEP 1601 (2016) 104
54. Sensitivity of NEXT-100 to neutrinoless double beta decay
NEXT Collaboration (J. Martin-Albo (Valencia U., IFIC) *et al.*). Nov 30, 2015. 29 pp.
arXiv:1511.09246
55. Conceptual design report for experimental search for
lepton flavor violating $\mu^- \rightarrow e^-$
conversion at sensitivity of 10^{-16} with a slow-
extracted bunched proton beam (COMET).
KEK-2009-10
56. Beam and SKS spectrometers at the K1.8 beam line.
Prog. Theor. Exp. Phys. (PTEP) 2012, 02B010
57. Search for the Θ^+ pentaquark via the $\pi^- p \rightarrow K^- X$ reaction at 1.92 GeV/c
Phys.Rev.Lett. 109 (2012) 132002
58. J-PARC E27 Experiment to Search for a Nuclear Kaon Bound State $K^- pp$
Few Body Syst. 54 (2013) 1191-1194
59. Search for Pentaquark Θ^+ in Hadronic Reaction at J-PARC
Few Body Syst. 54 (2013) 955-960
60. High Precision γ -ray Spectroscopy of $4 \Lambda\text{He}$ and $19 \Lambda\text{F}$ at J-PARC.
Proceedings of the 12th Asia Pacific Physics Conference,
JPS Conf. Proc., 013076 (2014)
61. Gamma-ray spectroscopy of hypernuclei —present and future
Nuclear Physics, Section A, Volume 914, p. 99-108. (2013)
62. Search for the Θ^+ pentaquark at J-PARC.
Nuclear Physics A 914 (2013) 91–96
63. High-resolution search for the Θ^+ pentaquark via a pion-induced reaction at J-PARC
Physical Review C 90, 035205 (2014)

64. Search for $6\Lambda\text{H}$ hypernucleus by the $6\text{Li}(\pi^-, \text{K}^+)$ reaction at $p\pi^- = 1.2\text{GeV}/c$.
Physics Letters B 729(2014) 39–44
65. Study on $6\Lambda\text{H}$ hypernucleus by the (π^-, K^+) reaction at J-PARC
EPJ Web Conf. 66 (2014) 09017
66. Inclusive spectrum of the $d(\pi^+, \text{K}^+)$ reaction at $1.69\text{ GeV}/c$.
Prog. Theor. Exp. Phys. 2014, 101D03
67. Observation of Spin-Dependent Charge Symmetry Breaking in ΛN Interaction: Gamma-Ray Spectroscopy of ${}_{\Lambda}^4\text{He}$.
Phys.Rev.Lett. 115 (2015) 22, 222501
68. J-PARC E27 Experiment to Search for a K^- pp Bound State.
JPS Conf.Proc. 8 (2015) 021020.
69. J-PARC E19 Experiment: Pentaquark Θ^+ Search in Hadronic Reaction at J-PARC.
JPS Conf.Proc. 8 (2015) 022011
70. Study of ΛN Interaction via the γ -ray Spectroscopy of $({}_{\Lambda}^4\text{He})$ and $({}_{\Lambda}^{19}\text{F})$ (E13-1st).
JPS Conf.Proc. 8 (2015) 021017
71. Measurement of the Λ Spin-flip $B(M1)$ Value in Hypernuclei.
JPS Conf.Proc. 8 (2015) 022013
72. Fine-granularity electromagnetic calorimeter using plastic scintillator strip-array.
NIM A 557 (2006) 460-478
73. Radiopurity assessment of the energy readout for the NEXT double beta decay experiment.
JINST 12 (2017) no.08, T08003
74. Microscopic simulation of xenon-based optical TPCs in the presence of molecular additives
Nucl.Instrum.Meth. A877 (2018) 157-172
75. Secondary scintillation yield of xenon with sub-percent levels of CO_2 additive for rare-event detection
Phys.Lett. B773 (2017) 663-671
76. Measurements of the Higgs boson production and decay rates and constraints on its couplings from a combined ATLAS and CMS analysis of the LHC pp collision data at $\sqrt{s}=7$ and 8 TeV . **JHEP 1608 (2016) 045**
77. Development of an extremely thin-wall straw tracker operational in vacuum – The COMET straw tracker system. **Nucl.Instrum.Meth. A845 (2017) 269-272**
78. Development of Ultrathin $12\ \mu\text{m}$ Thick Straw Tubes for the Tracking Detector of COMET Experiment.
MSS/MIC 2019, 1-4
79. Construction on vacuum-compatible straw tracker for COMET Phase-I. **Nucl.Instrum.Meth.A 958 (2020) 162800.**
80. Measurement of the differential cross sections of the $\Sigma^-p\Sigma^-p$ elastic scattering in momentum range 470 to $850\text{ MeV}/c$. **Phys.Rev.C 104 (2021) 4, 045204**
81. Precise measurement of differential cross sections of the $\Sigma^-p \rightarrow \Lambda n \Sigma^-p \rightarrow \Lambda n$ reaction in momentum range 470 - $650\text{ MeV}/c$. **Phys.Rev.Lett. 128 (2022) 7, 072501.**
82. Measurement of differential cross sections for Σ^+p elastic scattering in the momentum range 0.44 – $0.80\text{ GeV}/c$. **PTEP 2022 (2022) 9, 093D01**
83. Installation for Manufacturing Straw Detectors for the Comet Experiment. **Phys.Part.Nucl.Lett. 19 (2022) 2, 117-122**
84. Vacuum-Compatible, Ultra-Thin-Wall Straw Tracker; Detector construction, Thinner straw R&D, and the brand-new graphite-straw development. **Nucl.Instrum.Meth.A 1042 (2022) 167373**

In total, about 1300 publications, in the last five years about 500.