

Curriculum Vitae

At FNAL
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Education:

2008: Ph.D. in Phys. & Math., Supervisor Prof. Julian Budagov.
Moscow Engineering Physics Institute (State University), Russia
Thesis: "*Scintillation detectors for CDF II in experiments on heavy quarks physics at Tevatron*"

1999: Master degree in Physics from Ivane Javakhishvili State University of Tbilisi, Rep. of Georgia,
Physicist, Teacher of Physics, Mathematics and Informatics.

1992: Master degree in Aircraft Engineering from Georgian Technical University, Rep. of Georgia

Positions held:

2008 – 2010: Time to time temporary fulfilled duties for the Head of HMPR Department at DNLP/JINR.

1999 – p.d.: From engineer to scientist. Dzhelapov Laboratory of Nuclear Problems, Joint Institute for Nuclear Research (DLNP JINR, Dubna, Russia).

1993 – 1999: The laboratory assistant at the aerodynamic laboratory of Aviation Institute, Tbilisi Technical University, Rep. of Georgia.

Awards:

2006: Awarded by 1st prize of Joint Institute for Nuclear Research (JINR, Russia) for a cycle of works on CDF muon scintillation detectors (№ 3147).

2007: Awarded by 2nd prize of PEPAN following the results of competition of publications in the journal "Particles and Nuclei, Letters" (PEPAN Letters, Russia) for 2005.

Computer and Technical skills:

I should estimate my skills on computers as Hardware expert (no diploma approves this estimation, but, for example, my duties at DNLP/JINR also include the sys-admin staff at HMPR Department).

I am an Expert in hardware development and experimental methods. I made ready several experimental set-ups and supplied these set-ups with software by myself. CAMAC, VME, NIM.

I have a high experience in LabView, ROOT, C/C++, AC++ (this environment used in FNAL for analysis), Fortran, PAW, Borland Pascal, MS Office.

To note: I prefer to develop the software for set-ups in LabView environment (have no doubts using C++ or Pascal environment also).

I have an experience in VHDL, Visual Basic/Visual C, HTML, PHP, MySQL

I have experience as a user for iFix, Oracle.

I should estimate my skill on electronics as expert (no diploma is, but I have more than 25 years experience to create by myself for some purpose the electrical devices – it is my hobby).

I am expert in engineering design.

**Scientific
Interests:**

Since 2000 for present I was involved into CDF/FNAL experiment (Central Detector at Fermilab, Fermi National Accelerator Laboratory) as a member of JINR/PISA/CDF group. My major duties at CDF/FNAL are maintenance of the CDF muon scintillation counters system. For this purpose I do the regular checks of counters efficiency and investigate the ways to improve their efficiency.

I have interest in the design, creation, R&D staffs of new detectors for experiments in high energy physics and investigations of their properties. I widely use the absolute calibration method (one-photoelectron method) to determine some properties of detectors with photomultipliers or photodiodes in my researches:

- 1) Currently I do investigation of the LYSO crystal properties in gain to estimate possibility to use based on LYSO calorimeters in future experiments (such as Mu2e or ILC) with high energy resolution.
- 2) Currently I do investigation possibility to use the new avalanche photodiodes (MAPD/SiPM) instead of the classic photomultiplier and development new detectors based on MAPD/SiPM.
- 3) Currently I do researches to find the ways to increase the CDF/FNAL muon system efficiency such as: to propose the additional scintillation counters layers to exist one, to propose of using the special electronic device to improve timing and rejection ability, R&D works for prototypes manufacturing, testing, installing to the CDF and analyses of data to estimate the efficiency of their involving to the CDF on-line trigger.
- 4) I am co-author and active member of the investigation of the scintillation material properties such as light output, light attenuation, long-term stability, timing.
- 5) I was co-author and active member for the design and development of the MBTS detector (ATLAS) using the scintillation bars.
- 6) I was co-author and active member for the development, design, assembling of the CPR2 detector for CDF II (FNAL).
- 7) I was active member for the development and assembling of the muon scintillation counters for CDF II (FNAL).
- 8) I have the experience in analyses. I do some researches for search Higg's in 2 gamma decay mode at CDF (as additional duties).

Papers: Main list of publications:

- 1) **Scintillation counters of the muon system at CDF II.** A.M. Artikov, O.E. Pukhov, G.A. Chlachidze, D. Chokheli. 2008. 14pp. Published in Phys.Part.Nucl.39:410-423,2008.
- 2) **Reply to the comment on 'On the aging of the scintillation counters for RUN II Muon system at CDF'.** A. Artikov, D. Chokheli (Dubna, JINR) . 2008. 2pp. Published in Nucl.Instrum.Meth.A591:468-469,2008.
- 3) **Possible modification of level 1 trigger of the CDF muon system at increased Tevatron luminosity.** A. Artikov, G. Chlachidze, D. Chokheli, and C. Bromberg. Part.Nucl.Lett.5(№2):114:171-188, 2008
- 4) **Study of SiPM with help of transient processes induced by light, dark-noise and current pulses.** D.Chokheli, V.Grebenyuk, and A.Kalinin. Presented at NEC'2007 - XXI-th International Symposium on Nuclear Electronics and Computing, Varna, Bulgaria, 10-17 September, 2007.
- 5) **On the aging of the scintillation counters for RUN II Muon System at CDF.** A. Artikov, D. Chokheli, O. Pukhov, G. Pauletta. 2007. 13pp. Published in Nucl.Instrum.Meth.A579:1122-1134,2007.
- 6) **CDF Central Preshower and Crack Detector Upgrade.** A. Artikov, ..., D. Chokheli et al. ANL-HEP-PR-07-09, FERMILAB-PUB-07-023-E, INFN-PI-N-2007-01, Jun 2007. 22pp. e-Print: arXiv:0706.3922 [physics.ins-det]
- 7) **New-generation large-area muon scintillation counters with wavelength shifter fiber readout for CDF II.** A. Artikov et al. 2006. 13pp., Published in Phys.Part.Nucl.Lett.3:188-200, 2006.
- 8) **Properties of the Ukraine polystyrene-based plastic scintillator UPS 923A.** A.Artikov, ..., D.Chokheli et al., JINR-D13-2005-111, Jul 2005. 15pp. Published in Nucl.Instrum.Meth.A555:125-131, 2005.
- 9) **Design and construction of new central and forward muon counters for CDF II.** A.Artikov, ... , D.Chokheli et al., 19pp., Published in Nucl.Instrum.Meth.A538:353-371,2005
- 10) **The preshower a new multichannel detector for the CDF. The scintillator plates of the new detector: design, production, quality control.** A.Artikov, ... , D.Chokheli et al., JINR preprint, P13-2005-27, 2005.
- 11) **Minimum bias scintillator counter geometry.** A. Artikov, D. Chokheli, J. Huston, B. Miller, and M. Nessi. Technical Report AT-GE-ES-0001, CERN, 2004.
- 12) **On the aging of the CSP and CSX counters.** A.Artikov, ... , D.Chokheli et al., CDF Note: CDF/PUB/MUON/PUBLIC/7033, May 2004.
- 13) **A new scintillator tile / fiber preshower detector for the CDF central calorimeter.** M. Gallinaro, ... , D.Chokheli et al., Presented at 2004 IEEE Nuclear Science Symposium and Medical Imaging Conference (NSS / MIC), Rome, Italy, 16-22 Oct 2004, e-Print Archive: physics/0411056.
- 14) **The 'miniskirt' counter array at CDF-II.** A.Artikov, ... , D.Chokheli et al., Part.Nucl.Lett.5:114:25-39, 2002
- 15) **Automatization of the monitoring and control of the muon scintillation counters at CDF II.** O.Pukhov, ... , D.Chokheli et al., Published in Part.Nucl.Lett.5:114:72-81, 2002.

An additional, I am also co-author for more than 150 publications with CDF/FNAL Collaboration, printed in Phys.Rev.Lett., Phys.Rev.D.