Evgeny N. Kuznetsov.
Resume.

Contact:

Evgeny N. Kuznetsov, kuznete@uah.edu. 320 Sparkman Dr., NSSTC, ST-12, Huntsville AL 35805
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Education: - May 1980. Radiotechnics. Moscow State IT College;
- July 1988 MS in Radio Frequency Engineering. Moscow State Technical University.

Employments:

- January 2026 – current: on-call position. Research Engineer VI, CSPAR UAH.
- April 2001 – March 2025 Research Engineer VI. CSPAR, University of Alabama in Huntsville;
- August 1988 – March 2001 Senior Electronics Engineer. Nuclear Physics Institute of the Moscow State University (NPI MSU), Moscow, Russia/ DESY (Hamburg, Germany)
- February 1982 -August 1988. Research Scholar. JSC Research Institute of Space Instrumentation, Moscow, Russia.

Objective:

Electrical and PCB layout design, simulation, implementation and testing of state-of-the-art high speed digital and RF analog instrumentation including amplifier systems, control interfaces, transmission lines, diagnostic circuitry and automated test stations. Familiar with designing of front-end electronics for large area silicon charged particle detectors, with implementation of custom VLSI chips for astrophysics instrumentation. Design of the readout electronics for neutron detectors, photo sensors of the Cherenkov telescopes.

Professional Experience / Assignments:

1988 – 1990 – Functionality support of the Cosmic Ray research station on Mt. Aragats, Armenia.

In 1990 – 2000 while being the NPI MSU employee Evgeny participated as a “visiting scientist” in the ZEUS collaboration at the Deutches Electronen Synchrotron (DESY) in Hamburg, Germany supporting assembling and tests of the front-end Si-detector boards, conducting the design of the Slow Control System (SCS) (Power, calibration, housekeeping) for the Hadron/Electron Separator of the ZEUS detector; supported SCS production and installation.

2000-2007 – design, production support and series of tests of the charge detector readout system for the Advanced Thin Ionization Calorimeter (ATIC). Support of four ATIC high altitude balloon flight campaigns in Antarctica, data analysis, instrument repairs, upgrades.

Design of very large area (10x10 cm) silicon detectors, for application in cosmic ray research programs (implemented in ZDDS and DSTB projects).

Schematic and layout design of the charge detector for "The Zero-Degree Detector System" (ZDDS) for fragmentation studies. Conducting experiments at heavy ion accelerators. (BNL, HIMAC/ Japan).

Design of the pixilated charge particle detector for cosmic ray spectrometer for the Deep Space Test Bed (DSTB) balloon project.

Design of the detector and readout electronics for the Trapped and Energetic Solar Particle Spectrometer (TaSEPS).

Design of the detector and readout system for the Electron Calorimeter (ECAL) and for the Linear Energy Transfer (LET) instruments; supporting tests at the MSFC synchrotron.

2011 – 2016 – Design of the detector and readout electronics for the Fast Neutron Spectrometer (FNS) for the AES NASA program. Supporting series of tests with radioisotopes and at PTB ion accelerator facility in Braunschweig, Germany and TRIUMF particle accelerator in Vancouver, Canada. FNS instrument was in operation on board ISS during 2016-2022. US Patent for FNS was received in February, 2021.

2019 – 2021 – design of the readout electronics for the NMLS detector for mounting on the Lunar probe to conduct Neutron Measurements on the Lunar Surface.

Series of experiments were conducted in frames of the Extreme Universe Space Observatory (EUSO) program in 2013 - 2024. Evgeny participated in developing of the telescope readout concept, designing of electronics and supported high-altitude balloon flights of three instruments. Telescopes were built using direct acquiring of the fluorescent and Cherenkov radiation in the atmosphere by standard PMTs and SIPM photon sensors. A dedicated technique and light sources were developed to perform field tests and absolute calibration of telescopes of the EUSO balloon instruments.

US Patent for temperature-compensated SiPM sensor was acquired in April, 2018.

In 2020 – evaluation and environmental characterizing of the REDLEN detector module designed by HEXITEC collaboration for the X-ray imaging telescope on CZT detectors.

In 2021 – 2025: design of the detector construction and front-end electronics for the NuSol Cubesat instrument built on GAGG crystals read out by large area SiPM sensors.

Selected publications:

"The Camera and Readout for the Trinity Demonstrator and the EUSO-SPB2 Cherenkov Telescope." Bagheri, Mahdi et al. NIM A, Part I, 1070 (2025)

Temperature-compensated silicon photomultiplier, E.Kuznetsov, doi.org/10.1016/j.NIMA.2017.11.060 (2017)

Calibration aspects of the JEM-EUSO mission, J.H. Adams, Jr. et al., Exp. Astron., DOI 10.1007/s10686-015-9453-2 (2015)

The EUSO-Balloon pathfinder, J.H. Adams, Jr. et al., Exp. Astron., Exp. Astron., DOI 10.1007/s10686-015-9467-9 (2015).

A balloon-borne prototype for demonstrating the concept of JEM-EUSO, P. von Ballmoos et al., Advances in Space Research, 53, 1544-1550 (2014)

The calibration of EUSO Balloon using airborne light sources mounted to a helicopter. James Adams at al., The 34th International Cosmic Ray Conference,30 July- 6 August, 2015 The Hague, The Netherlands.

Possible structure in the cosmic ray electron spectrum measured by the ATIC-2 and ATIC-4 experiments". A. D. Panov at al., Astrophys. Space Sci. Trans., 7, 119-124, 2011

An excess of cosmic ray electrons at energies of 300–800 GeV. J. Chang at al., Nature 456, 362–365. 20 November 2008

US Patent # 9,954,124 "Thermo-compensated silicon photomultiplier with on-chip temperature sensor", 24 April, 2018

US Patent # 10,908,303 "Neutron spectrometer", 2 February, 2021