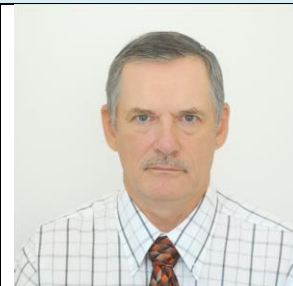


Information about the scientific laboratory		
1	Organization	Federal State Autonomous Educational Institution of Higher Education "National Research Tomsk State University"
2	Laboratory	High Energy Physics Data Analysis Laboratory
3	Head of the laboratory	Filimonov Sergey Nikolaevich, phd, https://persona.tsu.ru/Home/UserProfile/466
4	Laboratory website	http://hep.tsu.ru/
Information about the scientific project		
5	Project name	Experimental modeling and big data analysis in particle physics
6	Project supervisor	Ivanchenko, Vladimir Nikolaevich, Doctor of Physico-Mathematical Sciences, https://persona.tsu.ru/Home/UserProfile/24381
7	Implementation period	2024–2028 гг.
8	Field of sciences	Physics and Engineering sciences
9	The purpose of the project	• Development of methods for modeling the passage of elementary particles through matter for high-energy physics, space research, and radiation medicine. • Improvement of tools for collecting, storing, analyzing and processing big data. • Transfer of knowledge, experience and technologies from international megaprojects in the field of high energy physics and particle physics to scientific and technological projects implemented in the Russian Federation. • The study of fundamental interactions of elementary particles within and outside the Standard Model at Russian and foreign installations of the Megascience class. - • Training of personnel for Russian projects of the Megascience class.
10	Project objectives	• Creation of an Information Technology Support Center for Russian users of the GEANT4 package (GEANT4RU). • Development and implementation of improved physical and geometric models in the GEANT4 software package for high-energy physics experiments. • Development of new programs based on the GEANT4 package for applied research and practical applications in the space industry and radiation medicine. • Development of analysis methods and software for processing big data in high-energy physics, physical data analysis. • Development and testing of data acquisition electronics for the SPD NICA experiment. • Implementation of high energy physics data analysis methods in other fields of science and technology. • Creation of a multi-level personnel training system for Russian Megascience projects and technology companies.
11	Working languages of the laboratory	Russian, English

Information about the scientific supervisor		
12	Full name	Ivanchenko, Vladimir Nikolaevich, https://persona.tsu.ru/Home/UserProfile/24381
		
13	Academic degree and title	Doctor of Physico-Mathematical Sciences
14	Position	Senior Researcher
15	The field of scientific interests of the leading scientist	Elementary particle physics and modeling of the interaction of radiation with matter
16	The Hirsch index	75 / https://www.scopus.com/authid/detail.uri?authorId=7005576600
17	Publications	https://persona.tsu.ru/Publications/Index/24381
Vacancy description		
18	Position	Senior Researcher
19	The term of the contract	1 year with the possibility of extension
20	Wages	from 75 thousand rubles, depending on the level of qualifications and performance of the applicant
21	Requirements for the applicant	Academic degree equivalent to a PhD in physics, computer science, or related fields; Programming experience in C/C++; English at a level sufficient for reading technical documentation and participating in international meetings; Commitment to scientific research, willingness to work in a team, initiative and responsibility That would be a plus: Familiarity with Big Data analysis tools; Knowledge of machine learning algorithms; Work experience in the field of high energy physics; Knowledge of python, Geant4 and ROOT; High-energy physics data processing software development skills.
22	Tasks and expected results	Development and application of methods for modeling physical processes and reconstructing events using the Geant4 software package to optimize the design of the SPD detector and understand the physical processes occurring during particle collisions; Software development for offline data reconstruction and analysis using Big Data and machine learning methods; Preparation of scientific publications and reports; Scientific guidance for students and postgraduates.