Director of the Meshcheryakov Laboratory of Information Technologies

Sergei V. Shmatov, Doctor of Science (Physics and Mathematics).

<u>Date and place of birth:</u> 02 November 1972, Alma-Ata, USSR

<u>Education and degrees:</u>

- **1989–1995** Student of Moscow Engineering Physics Institute (MEPhI), Department of Experimental and Theoretical Physics
- **2002** Candidate of Science (Physics and Mathematics), PhD Thesis: "Study of the Multi-Particle Production with Global Characteristics of Nucleus-Nucleus Interactions at the LHC Energies"
- **2020** Doctor of Science (Physics and Mathematics), Doctoral Thesis: "Study of Muon Pair Production in the CMS Experiment at the Large Hadron Collider"

<u>Professional career:</u>

- **1995–2003** Junior Researcher, Researcher, Laboratory of High Energies (LHE), JINR
- **2003–2004** Head of Group, Laboratory of Particle Physics (LPP), JINR
- **2004–2006** Head of Sector, LPP, JINR
- **Since 2006** Head of Sector, The Veksler and Baldin Laboratory of High Energy Physics (VBLHEP), JINR

<u>Scientific and organizational activity:</u>

- **Since 2002** Russia and Dubna Member States (RDMS) Grid Data Manager for the Compact Muon Solenoid (CMS) Collaboration at the LHC, CERN
- **Since 2003** Member, Scientific Secretary, Co-chairperson of programme and organizing committees of more than 30 international workshops, conferences, schools and other events
- **Since 2004** Leader of the JINR programme of physics research with the CMS Detector at the LHC, CERN
- **2004–2006** Member of the Section of the LPP Science & Technology Council, JINR
- **Since 2005** Physics Coordinator of Dubna Member States (DMS) participation programme of physics research with the CMS Detector at the LHC, CERN
- **Since 2005** Chairperson of the DMS Physics Meeting
- **2005–2007** Member of the LPP Science & Technology Council, JINR
- **Since 2009** Scientific Secretary of the Joint Seminar of RDMS CMS Collaboration "Physics at the LHC"
- **Since 2010** Member of the Physics Section of the VBLHEP Science & Technology Council, JINR
- **2019–2021** Member of the International Working Group for JINR Long-Term Development Strategy up to 2030 and beyond (Section of Relativistic Heavy-Ion and Spin Physics)
- **Since 2022** Member of the Meshcheryakov Laboratory of Information Technologies (MLIT) Science & Technology Council, JINR
- **Since 2022** Deputy JINR Representative in CMS Collaboration, CERN

Experiments and projects:

- **1993–1998**   The experiments at the Synchrophasotron/Nuclotron, JINR
- **Since 1996**   The CMS experiment at the LHC, CERN
- **Since 2002**   CMS Tier-2 Level Center for a distributed data analysis at JINR
- **2002–2003**   The HERA-B experiment, DESY
- **Since 2003**   Worldwide LHC Computing Grid Project
- **2004–2010**   European project EGEE (Enabling GRID for E-sciencE)
- **Since 2008**   The CMS Regional Operation Center in JINR
- **Since 2011**   CMS Tier-1 Level Center for a distributed data analysis at JINR
- **Since 2022**   SPD Collaboration at the collider NICA, JINR

Educational activities:

- **Since 2002**   Permanent supervision of diploma works and of theses, supervisor of the two PhD Theses and more than 20 master's works
- **Since 2002**   Permanent lectures on schools and trainings on high-energy and computing physics
- **2003–2006**   Lecturer, University Centre, JINR
- **2012–2020**   Associate Professor, Department of Fundamental Problems of Microworld Physics, Dubna State University
- **Since 2020**   Professor, Department of Fundamental Problems of Microworld Physics, Dubna State University

Scientific interests:

- Physics of elementary particles (The Standard Model and Beyond)
- Problems of dark matter
- Heavy Ion Physics
- Computational methods and software for data processing and analysis, physics modeling for high energy physics
- Development of data models and data processing models for high energy physics
- Grid technologies, parallel and distributed computing

Grants and federal contracts:

- **Since 1995**   Russian Foundation for Basic Research, 5 grants
- **2011–2013**   Project of the Ministry of Education and Science of the Russian Federation "Creation of an automated system of data processing for experiments at the Large Hadron Collider (LHC) of Tier-1 level and maintenance of Grid services for a distributed analysis of these data"
- **2012–2014**   Project of the Federal Agency of Science and Innovations of the Russian Federation "Modernization of the forward muon station ME1/1 of the CMS detector for operation in conditions of increased energy and beam intensity of the Large Hadron Collider at CERN"
- **2015–2016**   Project of the Federal Agency of Science and Innovations of the Russian Federation "Development of radiation-hardness components of the muon system and hadron calorimetry of the CMS superdetector of the CERN Large Hadron Collider"

- **2018–2019**   Project of the Federal Agency of Science and Innovations of the Russian Federation "Calibration, commissioning and maintenance of the upgraded components of the muon system and detector calorimetry of the CMS facility"

<u>Scientific publications:</u>

Author of more than 110 papers and reviews on elementary particle physics, searches for physics beyond the Standard Model, heavy ion physics, computing in high energy physics. Co-author of about 1200 papers within the CMS Collaboration.

<u>Prizes and awards:</u>

- Encouraging JINR prize for the 2021 year
- LPP and VBLHEP prizes for the years 2006, 2012, 2016, 2019, 2020, 2021
- JINR Certificates of Honour of the for the years 2013 and 2021
- The High Energy and Particle Physics Prize of European Physical Society for the 2013 in a team of the ATLAS and CMS Collaborations
- Commendation from the CMS Collaboration Spokesperson for the 2013 in a team of the RDMS CMS Collaboration