

# The first experience of using Rucio to manage SPD data

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Modern experiments in high energy physics are characterized by the need to process huge amounts of data.

SPD (Spin Physics Detector) is a universal detector of the NICA collider (Nucleotron-based Ion Collider facility), being built at the Joint Institute for Nuclear Research (Dubna), and designed to study the spin structure of the proton, deuteron and other spin phenomena with polarized beams of protons and deuterons. The expected volume of data collected only at the SPD installation is measured in petabytes per year. To process such volumes of data, it is necessary to combine the resources of several computing centers that can be located remotely, thus forming a geographically distributed computing environment. Given the volume of data and the need for processing in a geographically distributed computing environment, a data management system becomes a key tool for distributing data and ensuring its integrity and accessibility. There is a need for security and access control for this system. In the context of the Rucio Scientific Data management system, as an integral part of the GRID, authentication and authorization are key roles in ensuring security.

This report is devoted to Rucio deployment, configuration and integration with the JINR SSO using JWT-based authentication, and review of the first experience of SPD data management.

**Primary author:** КОНАК, Алексей

**Co-author:** PETROSYAN, Artem (JINR)

**Presenter:** КОНАК, Алексей

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