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JUNO Distributed Computing Infrastructure: Commissioning and Early Data Taking

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The Jiangmen Underground Neutrino Observatory (JUNO) is a 20 kton liquid scintillator detector located in South China. Its construction as completed on November 2024. JUNO aims at an unprecedented 3% energy resolution at 1 MeV to determine neutrino mass ordering and study oscillation phenomena with high precision. To support this ambitious physics program, JUNO relies on a Distributed Computing Infrastructure (DCI) jointly developed by IHEP and several European data centers, leveraging WLCG technologies. The DCI is expected to handle about 3 PB of data per year, enabling storage, distribution, and coordinated analysis across three continents.
This contribution reports on the deployment and operational experience of the DCI during water and LS filling, commissioning phase and the first data-taking period. We describe the integration of computing resources, data management workflows, and performance metrics observed in early operations. Lessons learned from commissioning activities and initial physics runs are discussed, highlighting the readiness of the infrastructure to meet JUNO's long-term computing requirements.

Primary author: ANDRONICO, Giuseppe (INFN Sez. CT)

Co-authors: Dr ZHANG, Xiaomei (IHEP); ATHAYDE MARCONDES DE ANDRE, Joao Pedro (IPHC CNRS)

Presenter: ANDRONICO, Giuseppe (INFN Sez. CT)

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