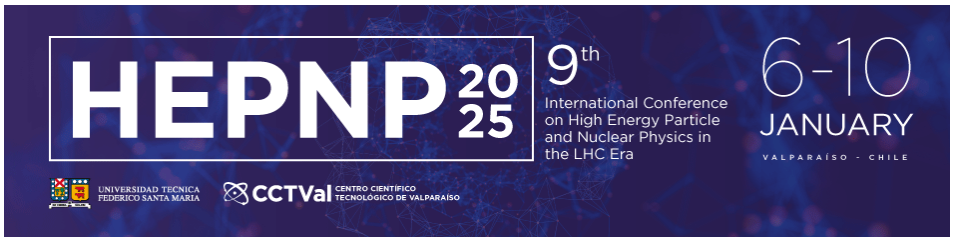

Contribution ID: **503** Type: **parallel**

Boosting HEP computing: the "Fundamental Research & Space Economy" Italian strategy within the National Center for HPC, Big Data, and Quantum Computing.

Thursday 9 January 2025 15:30 (20 minutes)

The need to interject, process and analyze large datasets in an as-short-as-possible amount of time is typical of big data use cases. The data analysis in High Energy Physics at CERN for instance will require, ahead of the next phase of high-luminosity at LHC, access to big amounts of data (order of 100 PB/year). To address this challenge, together with other key strategic sectors essential for the country's development, the ICSC Foundation has recently established the High-Performance Computing, Big Data, and Quantum Computing Research Centre (funded by the NextGenerationEU recovery plan). The main goal is to maintain and upgrade the national HPC and Big Data infrastructure, developing at the same time advanced methods and numerical applications to integrate computing, simulation, collection, and analysis of data of interest for fundamental research, also through cloud and distributed approaches.
In this context, within a hub-and-spoke framework, "Spoke 2" focuses on cutting-edge research in theoretical and experimental physics, primarily in experimental particle physics, conducted with or without accelerating machines, as well as detectors studying gravitational waves, and more.
This talk will outline the organization and current activities of this spoke, highlighting its scientific and technological contributions to the broader innovation ecosystem.

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