

UPGRADING THE LARGE HADRON COLLIDER

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SCIENCE TECH NEWS

Maria Girone, CTO of [CERN openlab](#), will be delivering a keynote talk this week on the biggest computing and data challenges faced by the high-energy physics community, including those posed by the ambitious upgrade programme for the Large Hadron Collider (LHC).

Girone is speaking at the EuroHPC Summit Week, which takes place [this week \(22-26 March\)](#), bringing together the main stakeholders in high-performance computing (HPC) in Europe, including technology suppliers, those running major infrastructures, and HPC users — from both science and industry. Her talk takes place this week on Thursday 25 March at 10:00 CET, and is available to all who have signed up for the EuroHPC Summit Week, [which is free of charge](#).

Girone’s presentation will summarise the unprecedented computing and data challenges posed by the ambitious upgrade programme for the Large Hadron Collider (LHC). The anticipated increase in the complexity of particle-collision events, as well the higher rate of data collection rate, will substantially outstrip the gains expected from technology evolution. Further increasing the efficiency of how we use the HPC facilities at our disposal could potentially address the resulting resource gap.

“We are engaging at the community level to solve the technical challenges related to the integration of HPC, thus helping to pave the way to the exascale era,” says Girone. “HPC is a driver of innovation, both for heterogenous hardware and AI.”

The EuroHPC Summit Week closes on Friday 26 March with the [PRACEdays21 panel discussion](#). CERN recently announced [a new collaboration](#) with PRACE, the Partnership for Advanced Computing in Europe; GÉANT, the pan-European network and services provider

for research and education; and SKAO, the organisation leading the development of the Square Kilometre Array radio-telescope. In her talk, Girone will discuss how the four leading research organisations are working together to overcome challenges related to the use of HPC to support large, data-intensive science projects.

Participation in the EuroHPC Summit Week 2021 is free of charge, open to anyone, and includes admission to all sessions, workshops, and tracks.