



Contribution ID: 15

Type: not specified

HiDRa: a calorimeter prototype for future particle accelerators

The European Strategy for Particle Physics identified an electron-positron Higgs factory as the highest priority next collider. From a calorimetry point of view, precision measurements at these accelerators require excellent hadronic energy resolution ($\sim \frac{30\%}{\sqrt{E}}$), especially in multi-jet events, to successfully separate Z, W, and Higgs decays.

The Dual-Readout (DR) technique, which simultaneously measures a scintillating and Cherenkov signal, is very efficient in compensating for event-by-event electromagnetic fraction fluctuations.

In Pavia, a prototype of a fibre DR calorimeter, the High-resolution highly granular Dual-Readout demonstrator (HiDRa), based on stainless-steel capillary tubes, was built and then tested at CERN in late September 2025. This demonstrator consists of a central highly granular part read out by SiPMs and a peripheral zone read out by PMTs.

Within the HiDRa collaboration, a dedicated data-analysis effort is underway to evaluate the prototype performance and compare it with the requirements of future accelerators.

Primary author: TACCHINI, LUCA DAVIDE

Presenter: TACCHINI, LUCA DAVIDE

Session Classification: Caffè e poster (dal N. 9 al N. 51)