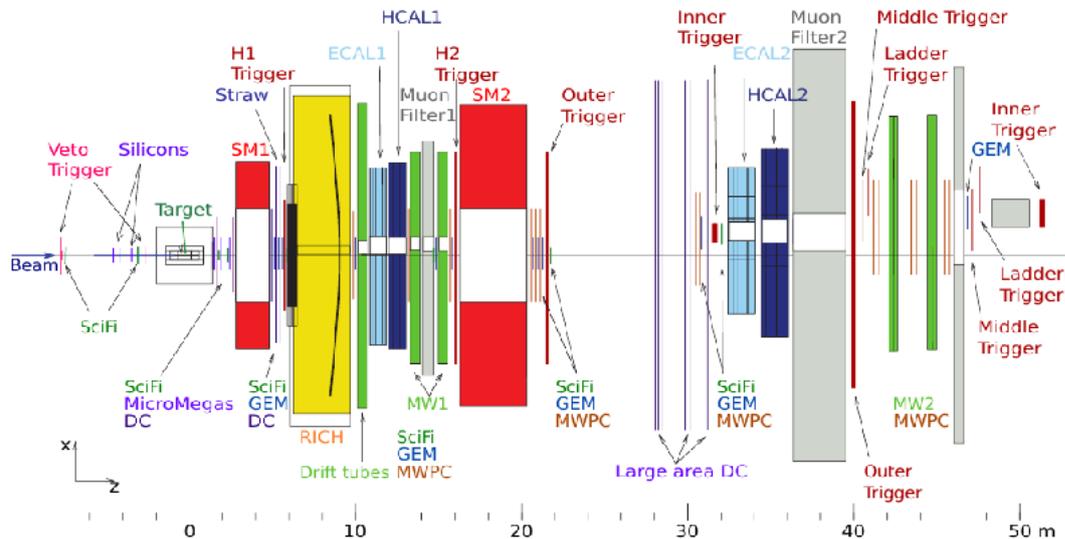# Hadron identification at the AMBER Experiment at CERN

The Apparatus for Meson and Baryon Experimental Research (AMBER) began collecting data in 2023 at the north end of CERN's Super Proton Synchrotron (SPS) accelerator complex. AMBER aims to shed light on key open issues in strong-interaction physics by using high-intensity hadron and muon beams.

The initial data aims to precisely measure the antiproton production cross sections relevant to indirect dark matter searches. These results are crucial for modeling the cosmic antiproton flux.

You will work with these data in the project. Your tasks will be:

- Understand secondary hadrons beams at SPS and the AMBER spectrometer

- Different methods of particle identification

- Identify protons in the beam using Cherenkov differential counters with achromatic ring focus (CEDAR) using the CERN ROOT framework

- Identify antiprotons using a ring image Cherenkov detector (RICH)
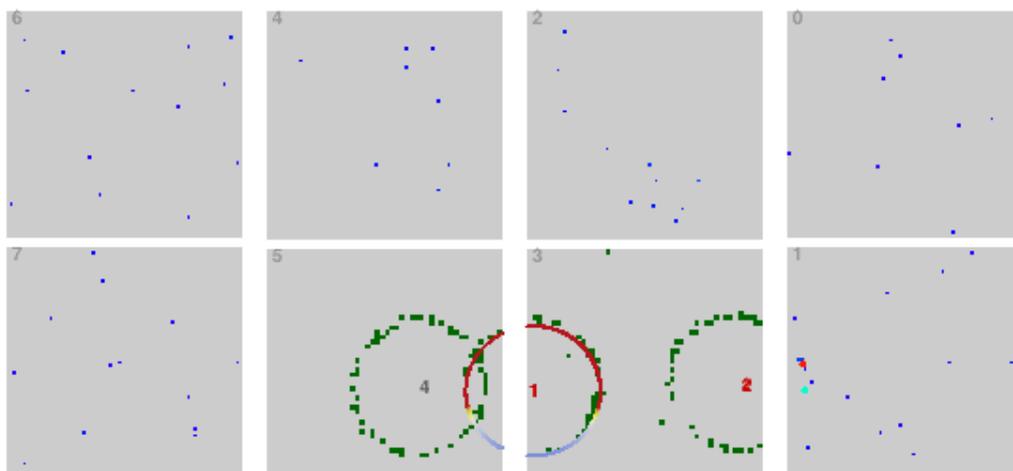
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