

DRD1 Gaseous Detectors School 2027

8 June 2027 - 18 June 2027

LNF

Scientific Programme

The school will focus on state-of-the-art gaseous detector technologies, including Micro-Pattern Gaseous Detectors (MPGDs), (Multi-)Resistive Plate Chambers ((M)RPCs), and wire-based detectors. The program features morning lectures by leading experts in the field, providing a comprehensive overview of gas detector physics, detector technologies, simulation and modeling, readout systems, manufacturing techniques, and applications. Afternoon sessions will be dedicated to hands-on exercises with various detector technologies, with a strong emphasis on experimental methods and practical implementation.

Lecture Program

Gas detectors physics

-) Primary ionization
-) Charge transport
-) Avalanche multiplication
-) Gas properties

Gaseous detector technologies

-) Micro-Pattern Gaseous Detectors (MPGDs)
-) (Multigap) Resistive Plate Chambers (M)RPCs
-) Wire-based detectors

Readout technologies

- Electronic readout
- Optical & hybrid readout

Simulation and modelling

Manufacturing techniques

Applications

- High Energy Physics (HEP)
- Applications beyond HEP
- Beyond fundamental research

Laboratory Exercise Program

-) Detector assembly
-) Instrumentation and detector operation
-) Performance characterization
-) Readout techniques
-) Simulation