

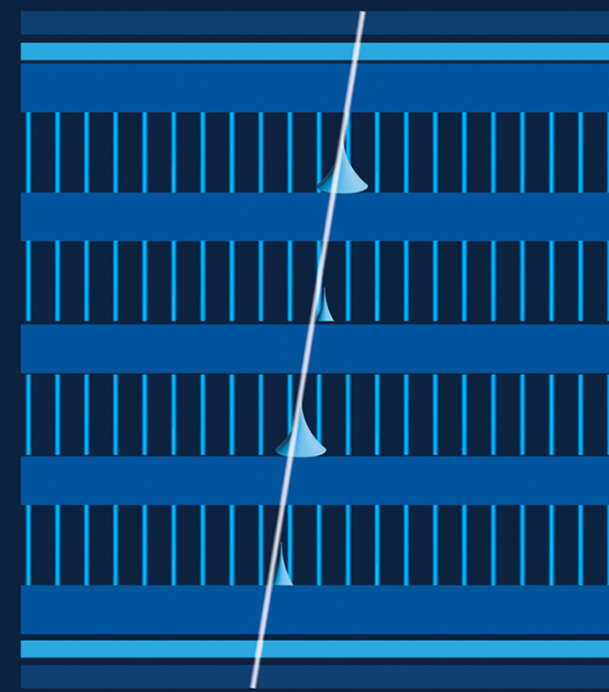
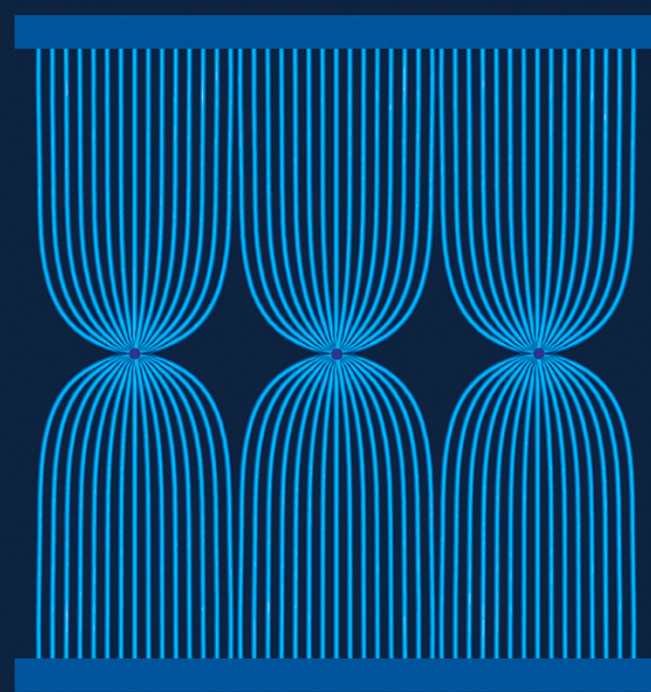
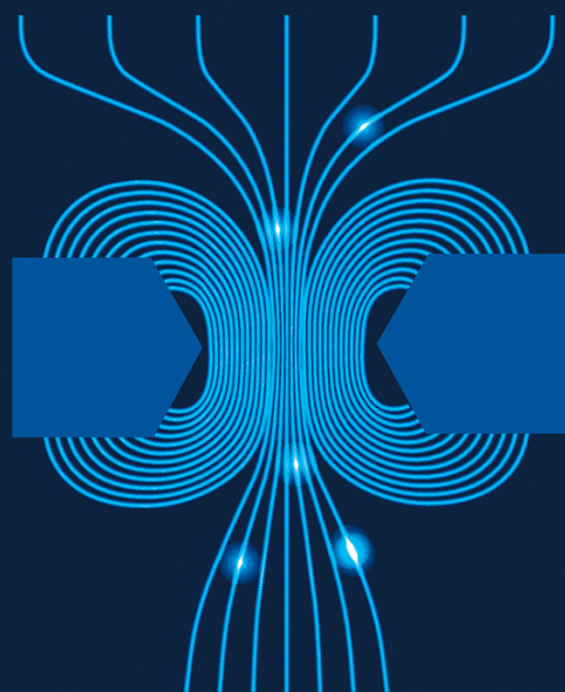
DRD1

Gaseous Detectors

School

FTD, University of Bonn, Germany

September 17-24, 2025



Scientific program

- Gaseous detectors physics
- Gaseous detector technologies
- Readout technologies
- Simulation, modelling and reconstruction
- Manufacturing techniques
- Applications of gaseous detectors

The school consists of academic lectures and hands-on laboratory exercises.

The lecture program will cover MPGD, (M)RPC and wire-based detector technologies.

Lecture sessions are open to the community and can be followed in-person or by remote connection.

School website and registration

<https://indico.cern.ch/e/drd1school2025>

Application deadline: May 31, 2025

Free registration for students.

Students are invited to present a poster in a dedicated session.

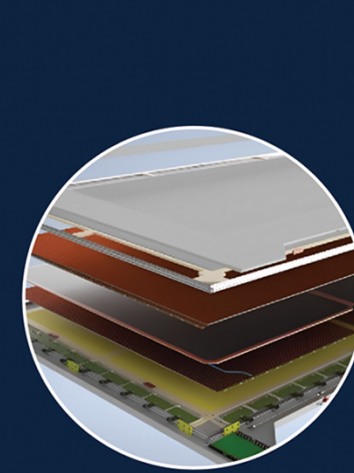
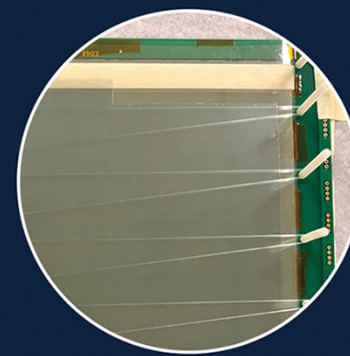
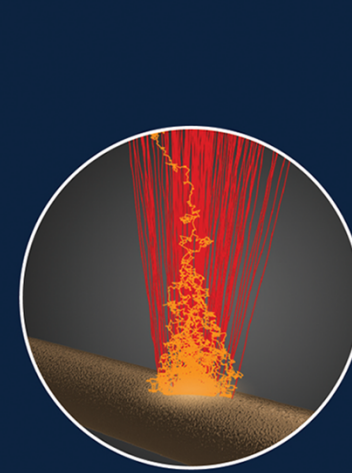
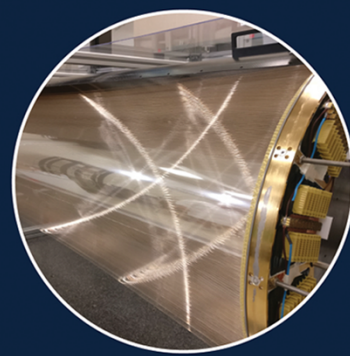
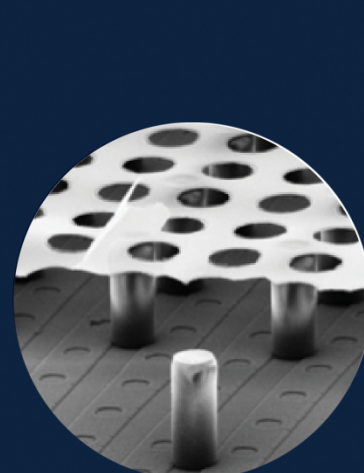
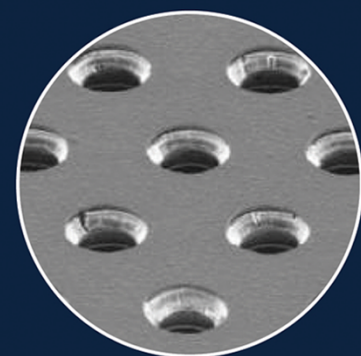
Local organising committee

Markus Ball	Bernhard Ketzer
Sarah Conée	Jan Paschek
Klaus Desch	Dmitri Schaab
Philip Hauer	Tim Schüttler
Jochen Kaminski	

Contact

drd1-school@cern.ch
Florian Brunbauer, Mauro Iodice

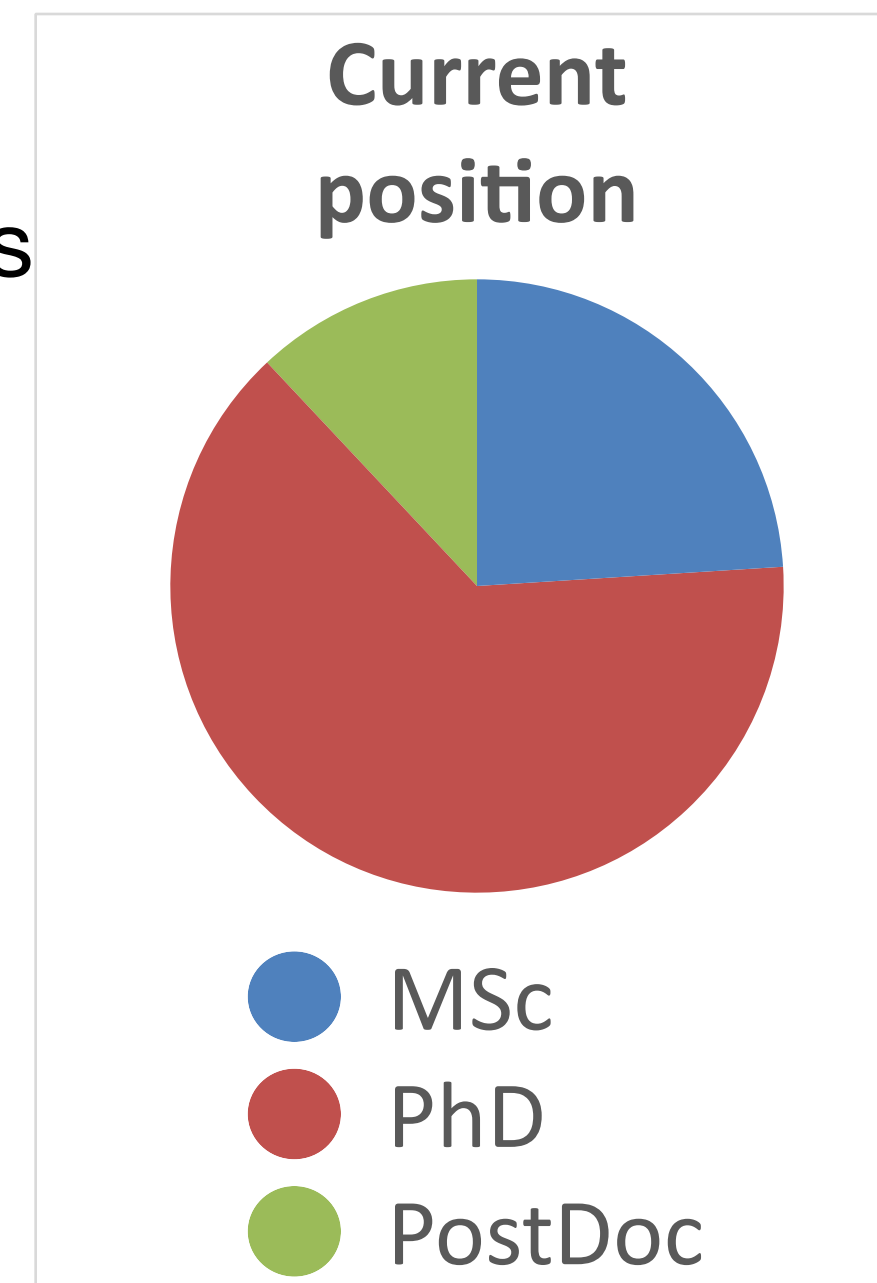
<https://indico.cern.ch/e/drd1school2025>



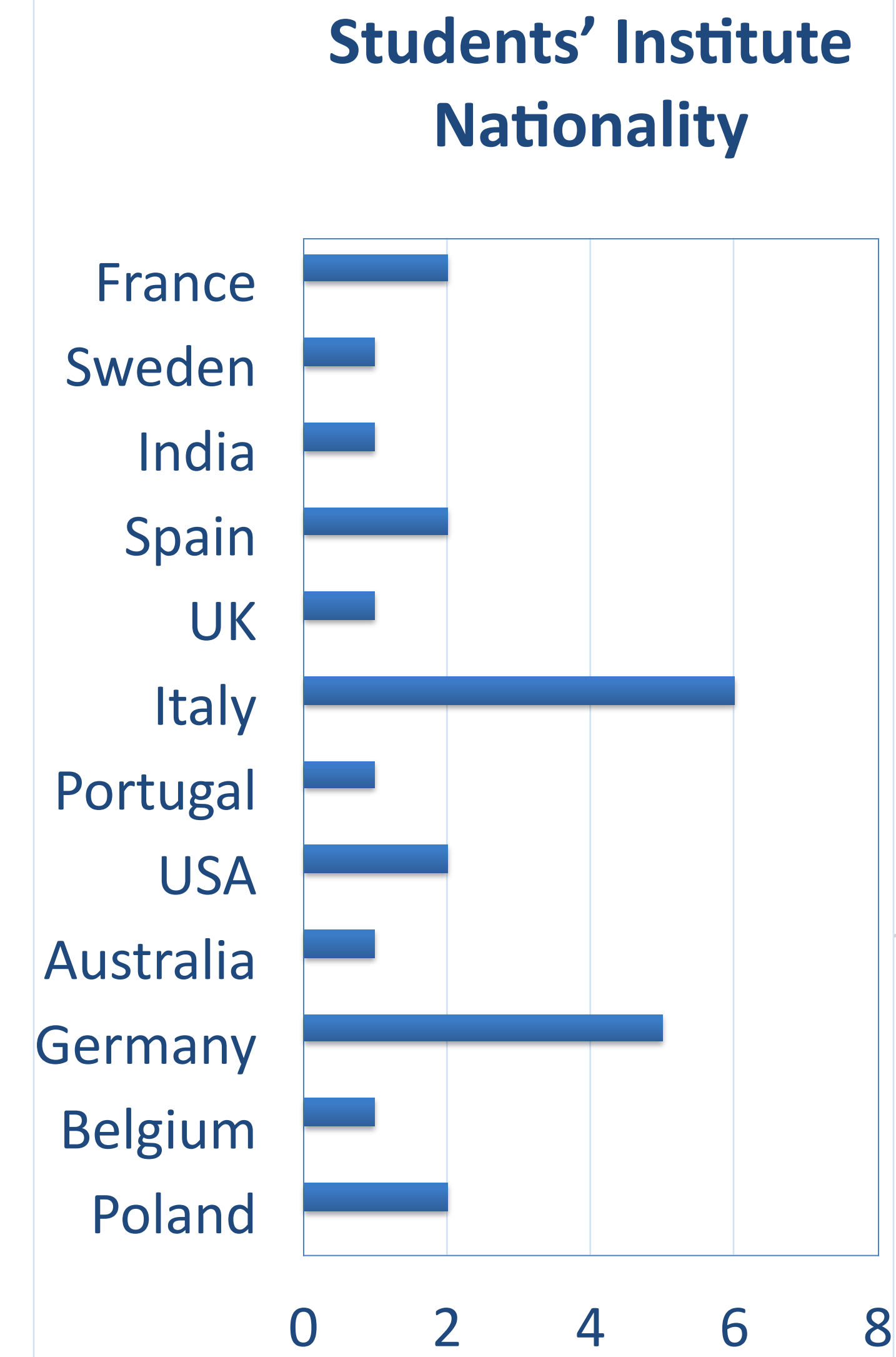
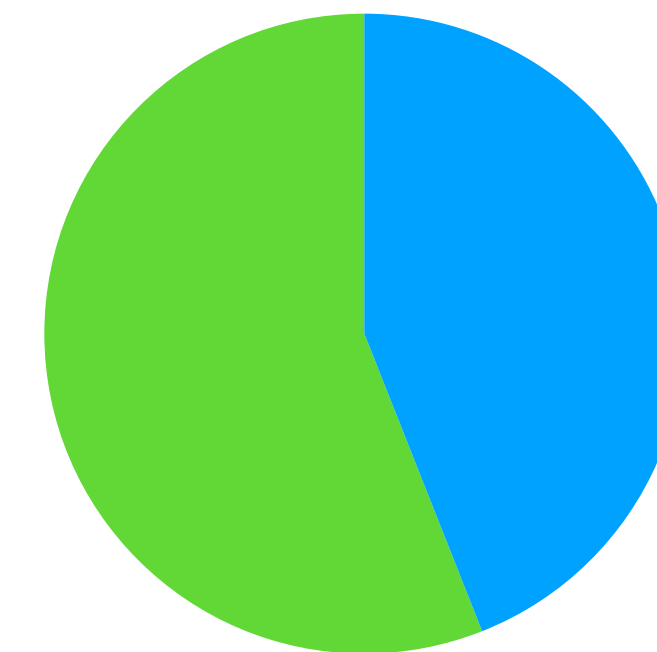
DRD1 School at FTD, Bonn

First **DRD1 Gaseous Detectors** school outside CERN was held at the FTD, Bonn, Germany from September 17-24.

24 students from 12 different countries followed a lecture program of 18h and 8 different lab exercises covering MPGDs, (M)RPCs and wire-based detectors.

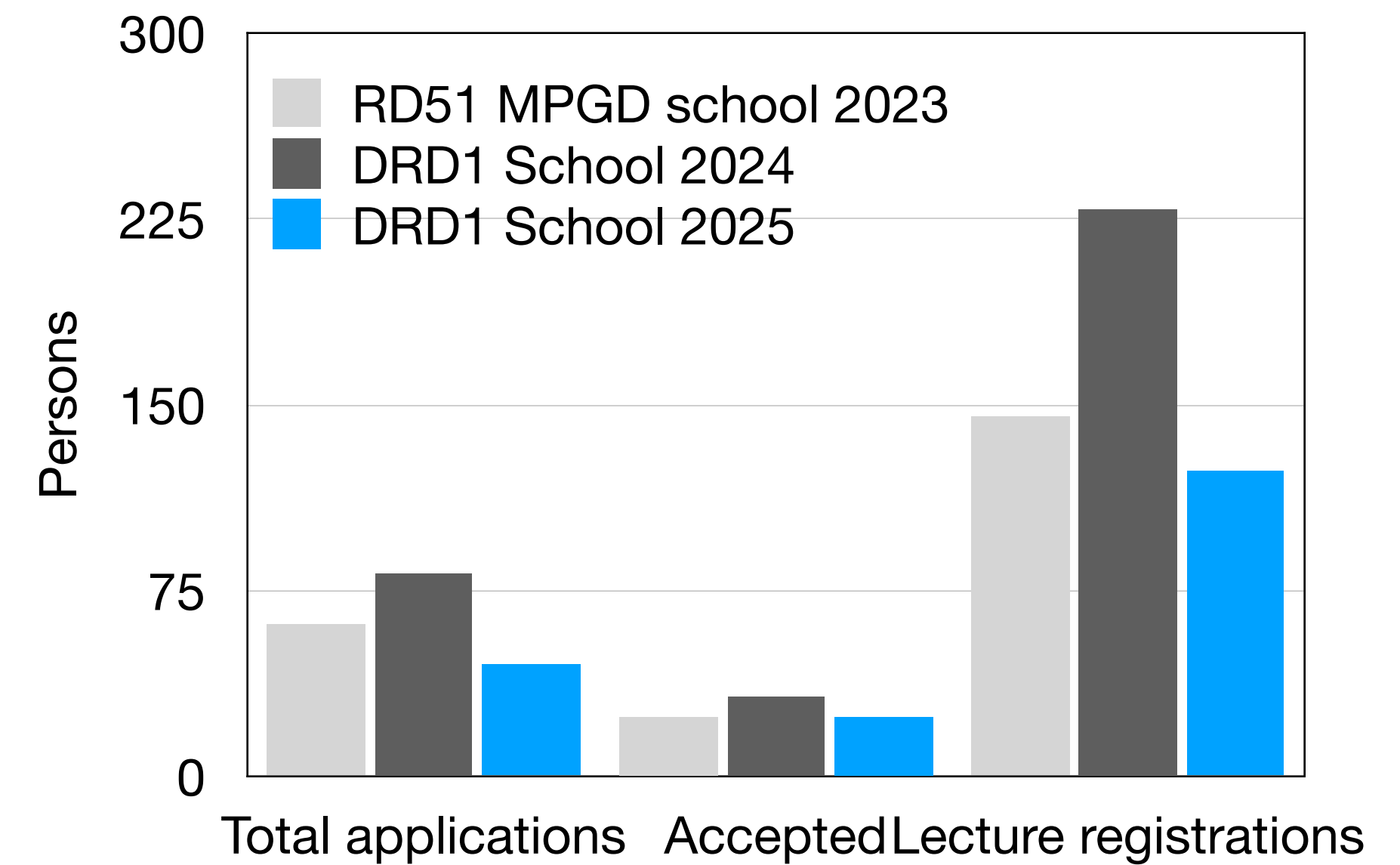


● Female ● Male



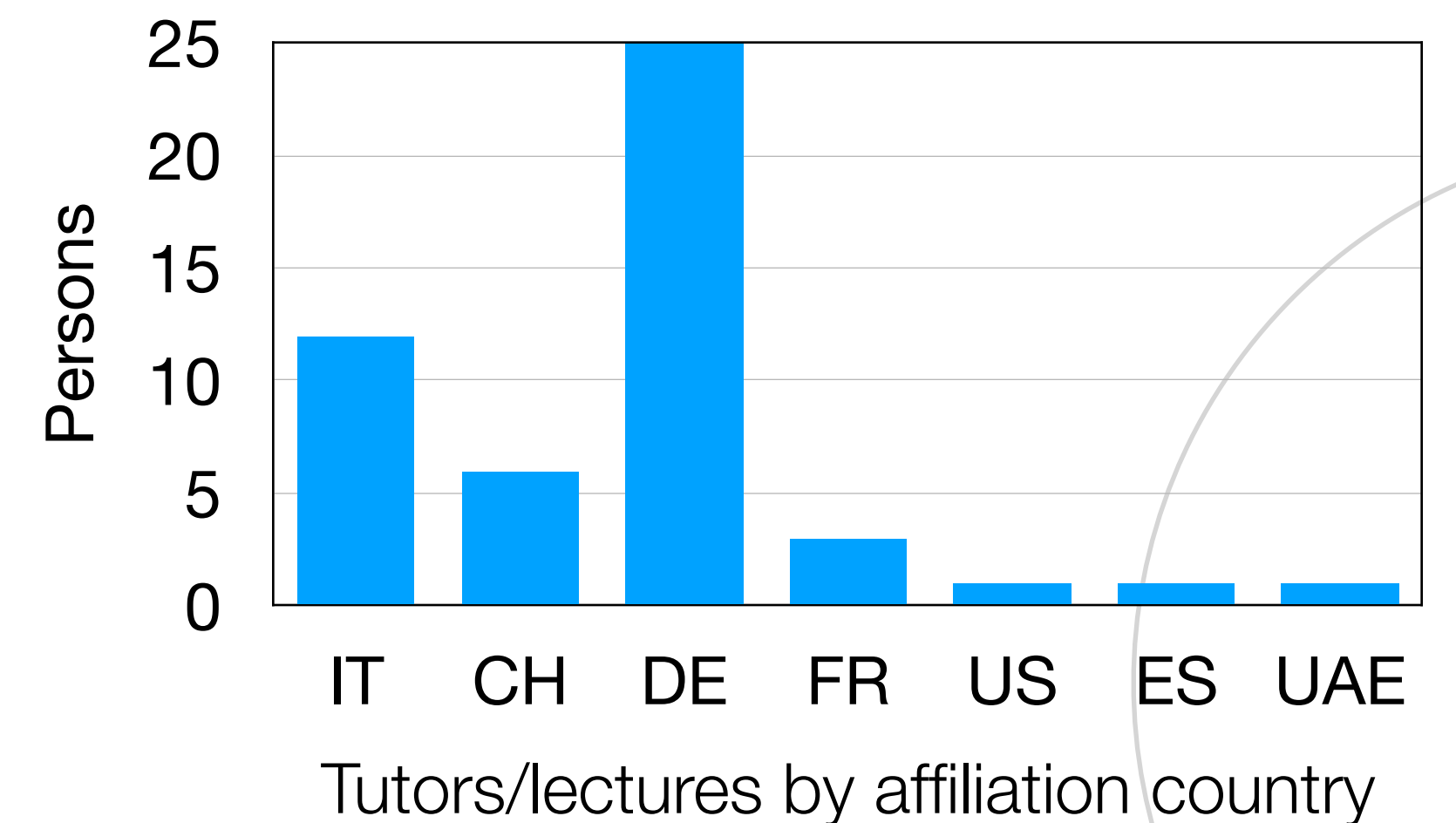
Applications

24 students selected from 45 applications.
>120 registrations to access lecture material and recordings
and Zoom connection during the lectures



Lectures / tutors

Almost 50 lecturers and tutors from DRD1 institutes with a strong participation from German colleagues contributed to the school.



Lecture program

Recordings are online, attached to talks as material.



Poster session

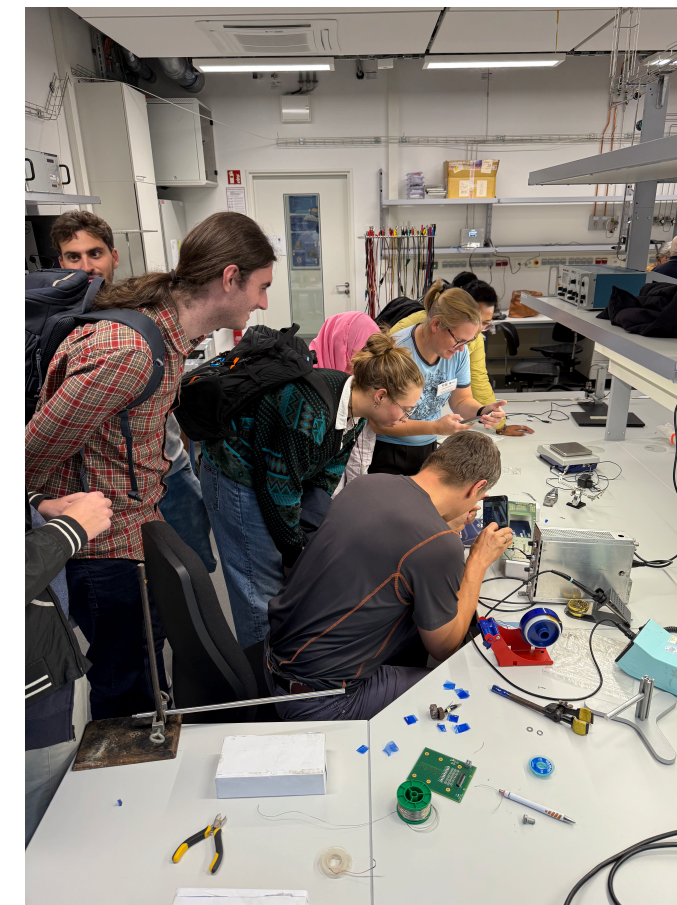
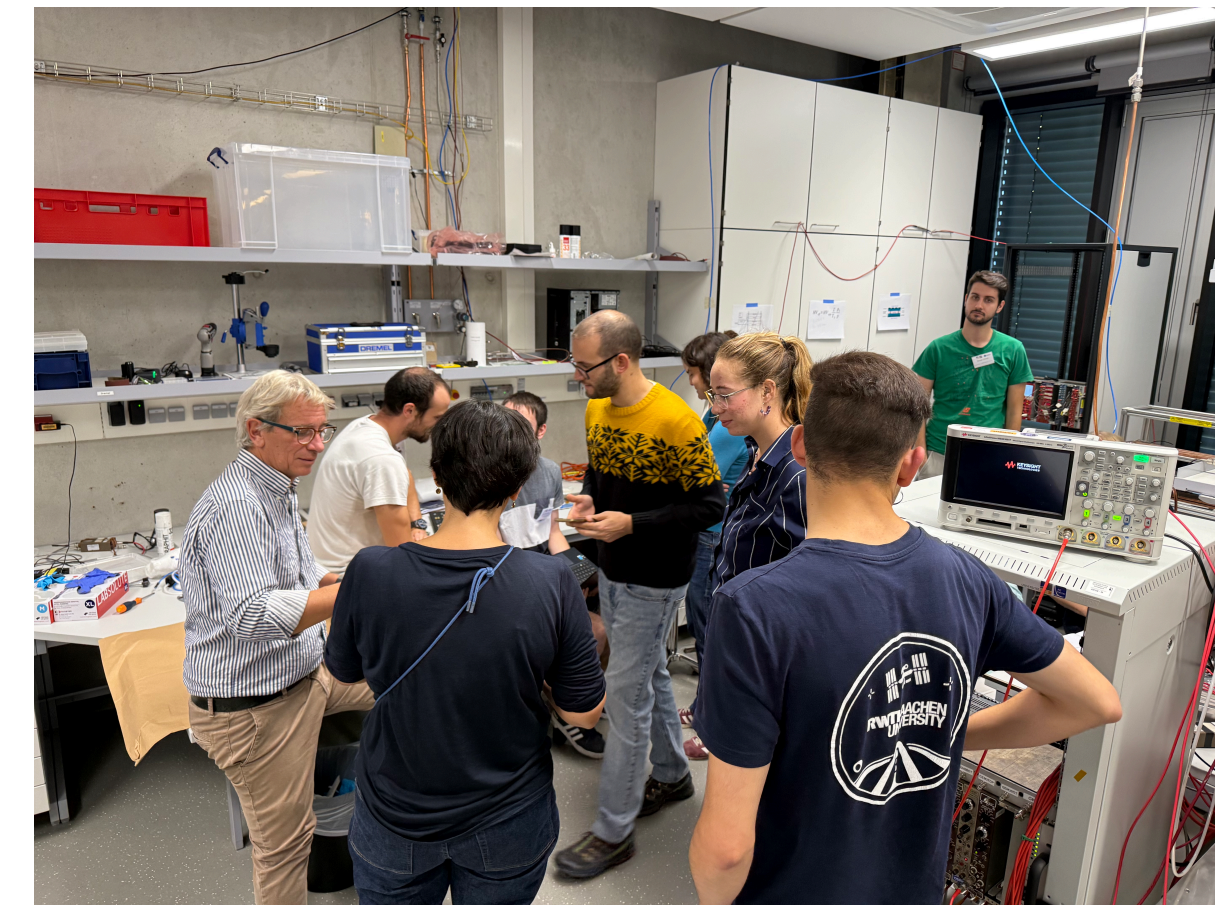
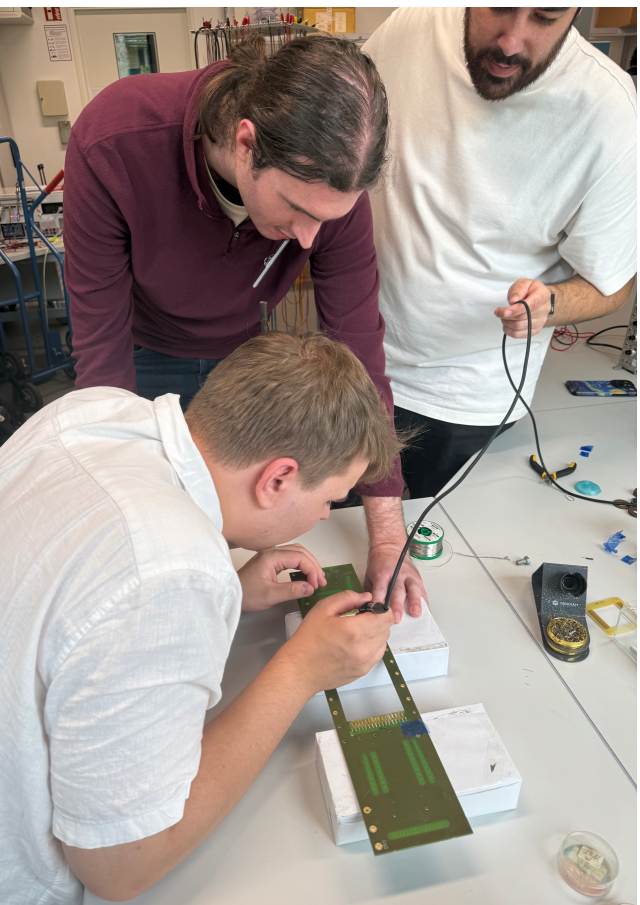
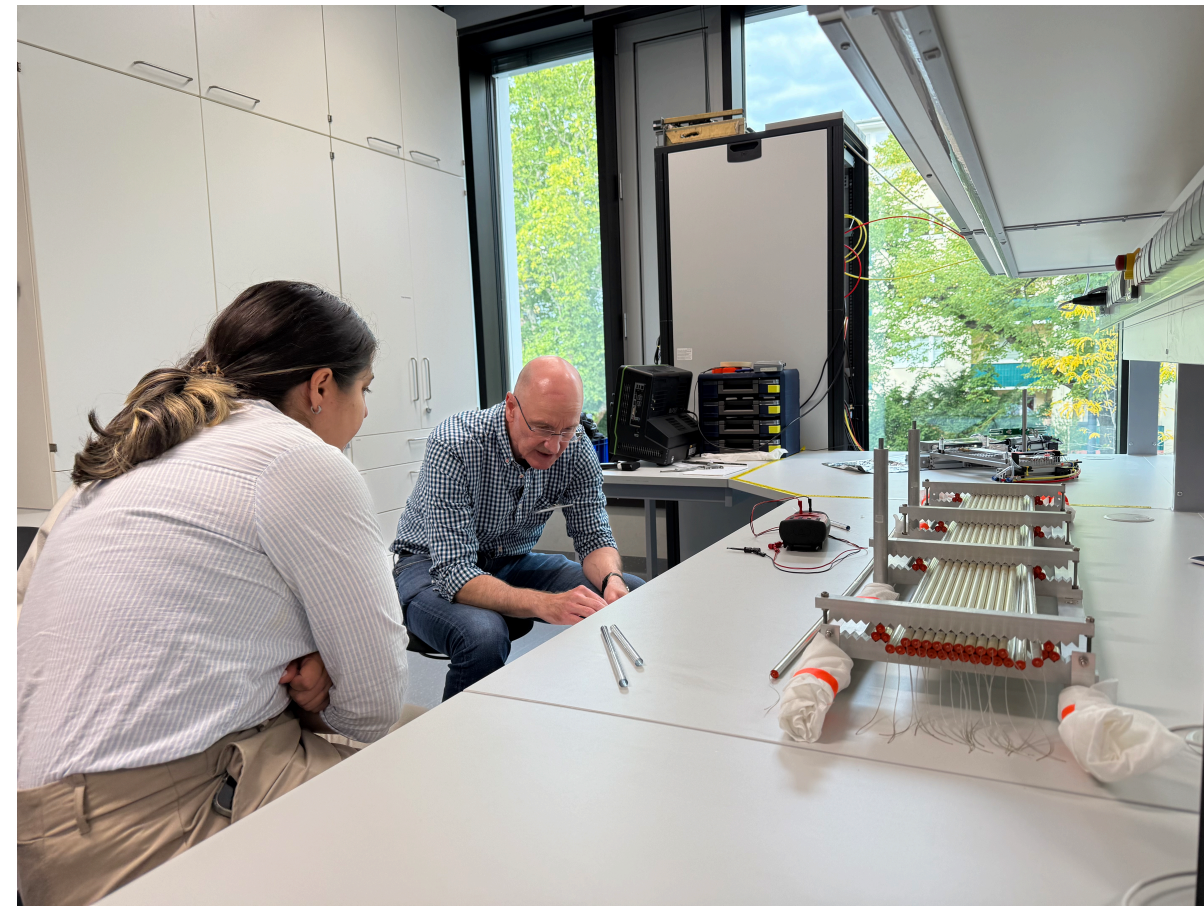


Lab exercises

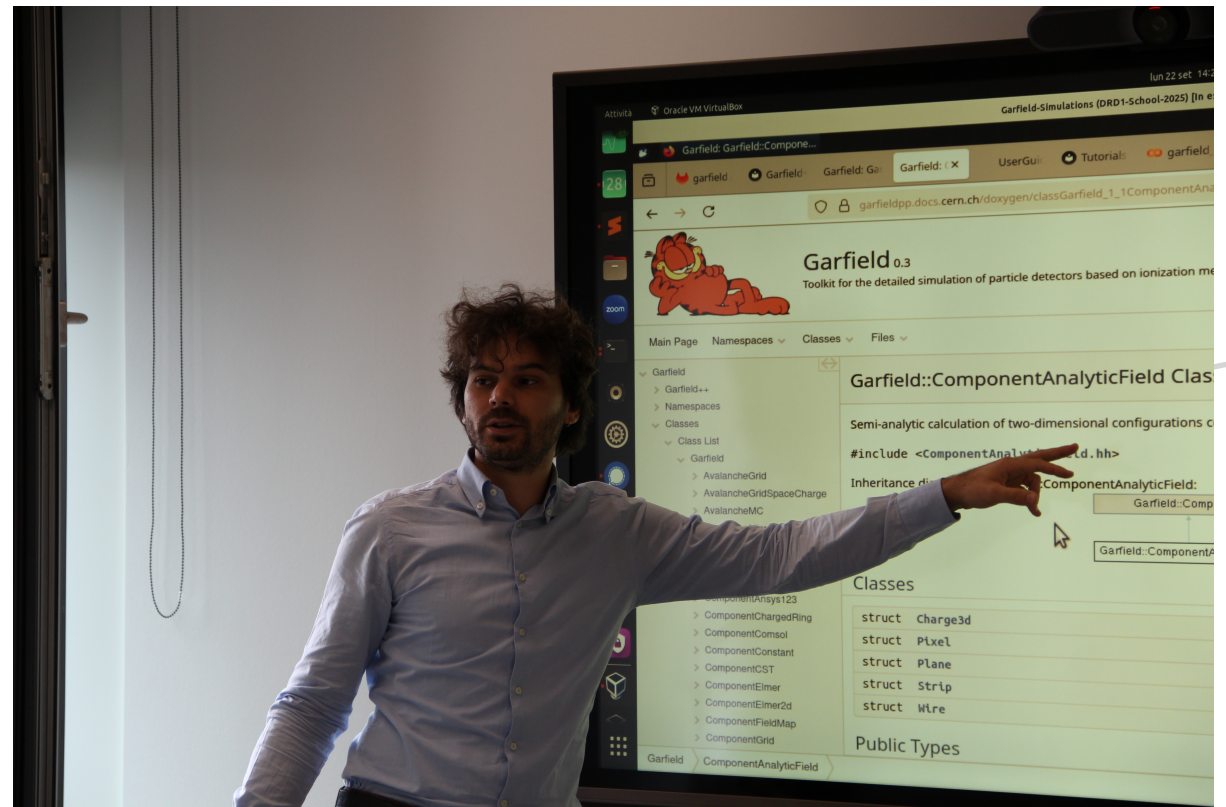
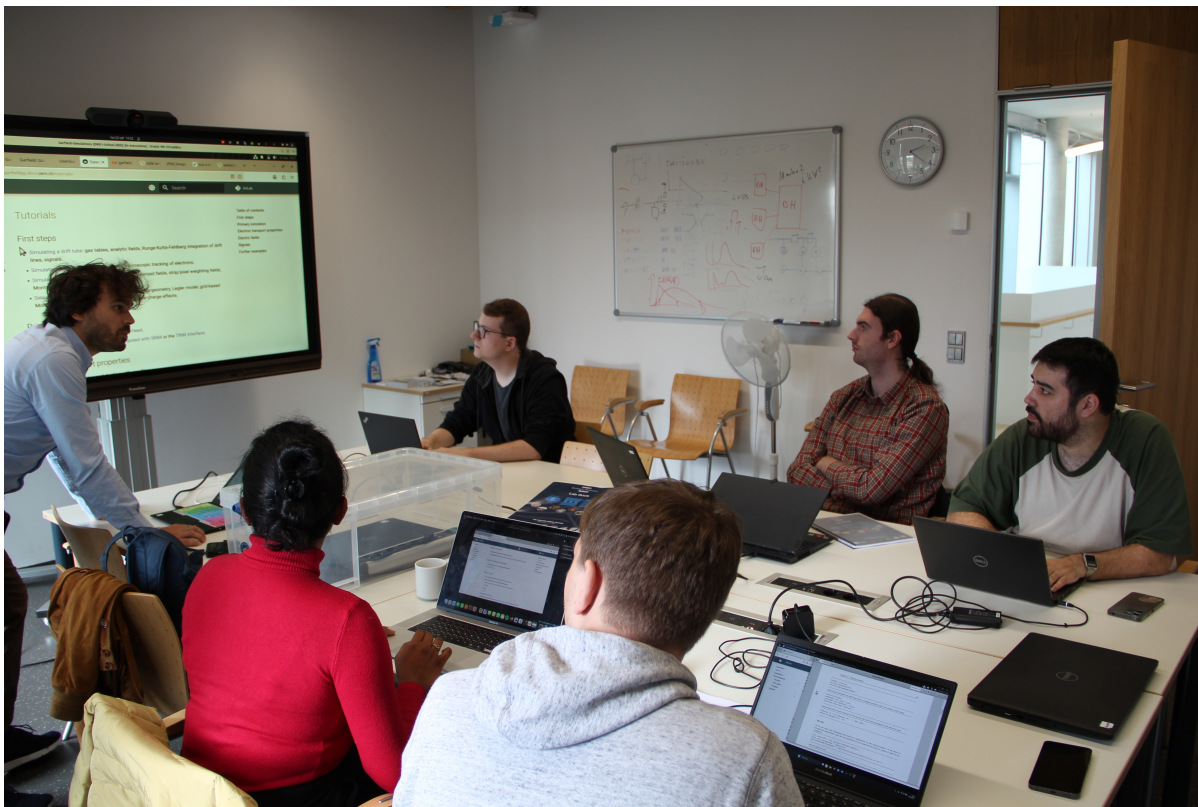
FTD at Bonn University hosting the school was a unique opportunity to include lab exercises on the **manufacturing and assembly** of GEMs in the in-house cleanroom facilities as well as the readout of a small TPC with **GridPix** detectors.



Lab exercises



Lab exercises



Feedback and reports

Feedback surveys with students, lecturers and tutors running.

Preliminary feedback - selected topics:

- Most students heard about school from their supervisors.
- Good feedback on level of lectures and exercises.
- Sometime program too dense - short lunch breaks.
- No strong underrepresentation of any detector technology.
- Good balance between lectures and exercises reported.
- Social program and spontaneous plans were appreciated.

Photos (CERNBox folder): <https://cernbox.cern.ch/s/myY50okGFOZIIHg>

Reports (in German):

<https://www.uni-bonn.de/de/neues/acht-tage-im-zeichen-modernster-gasdetektortechnologien>

<https://www.pi.uni-bonn.de/de/nachrichten/die-drd1-gaseous-detectors-school-2025-an-der-uni-bonn>

<https://www.ftd.uni-bonn.de/de/aktuelles-datenbank/die-drd1-gaseous-detectors-school-2025-an-der-uni-bonn>

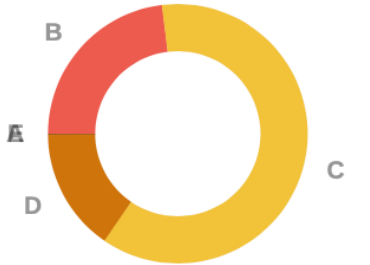
Which is your education level?

A. Undergraduate student: 0 (0.00%)

B. Master Student: 3 (23.08%)

C. PhD Student: 8 (61.54%)

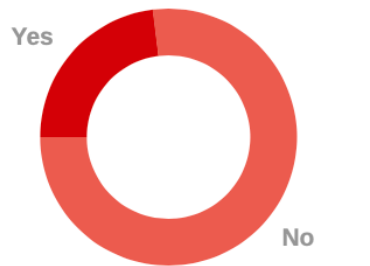
D. Post-doc: 2 (15.38%)



Was the program too ambitious (too long for the duration of the school)?

A. Yes: 3 (23.08%)

B. No: 10 (76.92%)

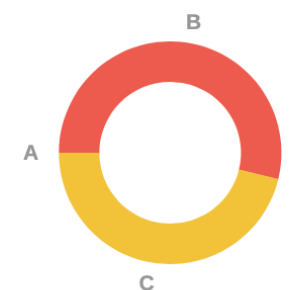


How was the clarity and quality of lectures, further reading references, depth of knowledge? Answered : 13

A. Poor: 0 (0.00%)

B. Good: 7 (53.85%)

C. Excellent: 6 (46.15%)



Student presentations

Lab groups are invited to prepare a 5-10min presentation on one of the lab exercises to present in the WG8 session.

Content

Presentation will explain the setup and experimental methods of one of the lab exercises

Can contain results obtained during the exercise as well as additional analysis performed.



Thank you to all tutors, lecturers and supporters!

Fabio Sauli
Bernhard Ketzer
Werner Riegler
Esther Ferrer
Ribas
Marcello
Abbrescia
Peter Wintz
Djunes Janssens
Hans Muller
Markus Ball
Yassid Ayyad
Giulio Aielli
Gabriel Charles

Yevgen Bilevych
Davide Pinci
Stefan Roth
Piotr Gasik
Konstantinos
Nikolopoulos
Paolo Iengo
Margherita
Primavera
Imad Laktineh
Jona Bortfeldt
Marco Cortesi
Florian Brunbauer
Mauro Iodice

Dimtri Schaab
Jan Paschek
Paul Clemens
Theodoros Avgitas
Riccardo Farinelli
Luca Quaglia
Barbara Liberti
Nicola De Filippis
David Smyczek
F. Procacci
Markus Gruber
Sara Leardini
Tim Schüttler
Jochen Kaminski

Jan Glowacz
Philip Hauer
Edoardo Gorini
Valerio D'Amico
Sabine Hartung
Thomas Block
Ioannis Manthos
Sarah Conée
Klaus Desch
Shania Müller
Max Knauseder

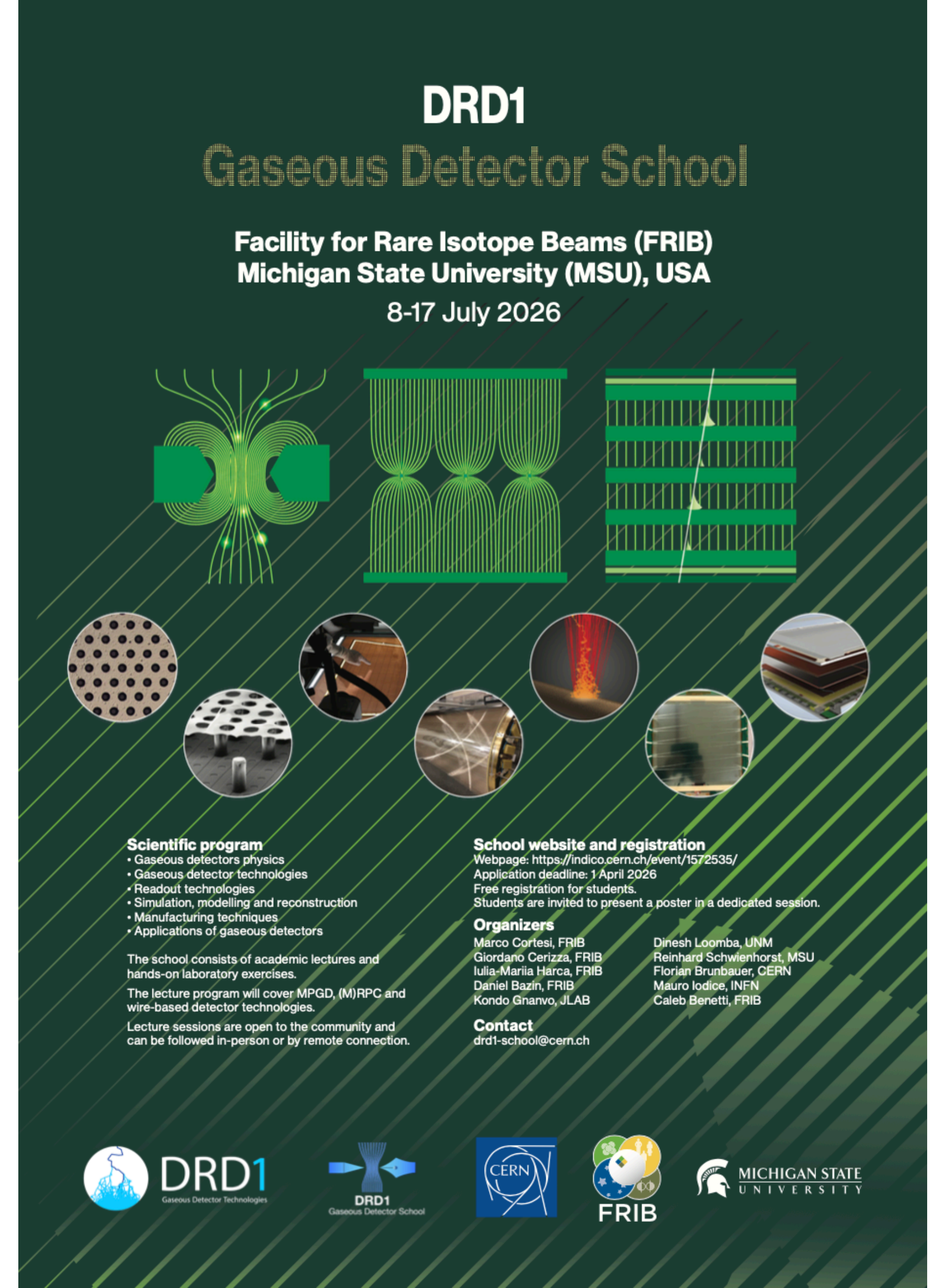
... sorry if we
missed someone!

Thank you for hosting the school at FTD!

DRD1 School 2026

The **next DRD1 Gaseous Detector School** will be hosted by FRIB, Michigan State University, USA from **July 8-17, 2026**.

Marco Cortesi has formed a team of **local organisers** and preparations for next year's school are starting.

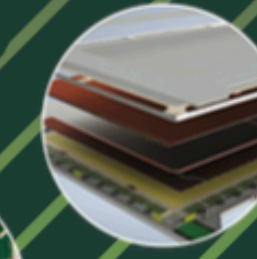
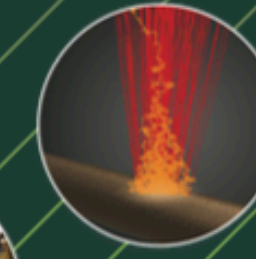
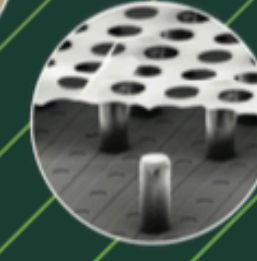
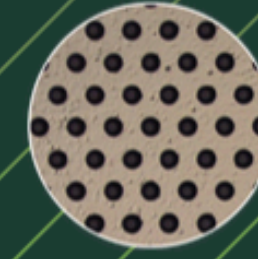
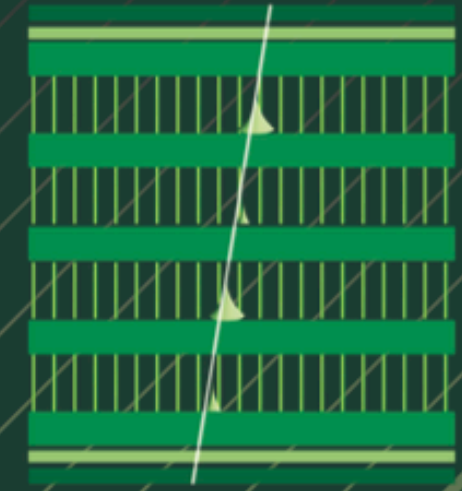
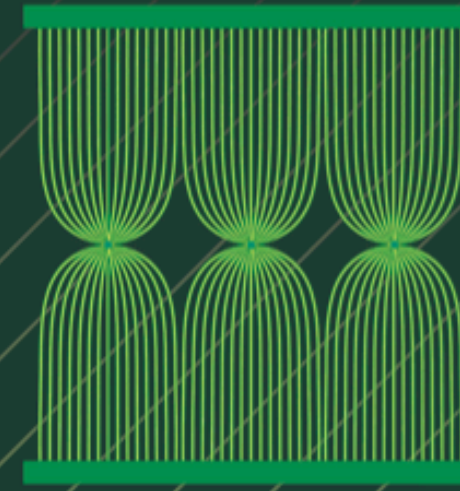
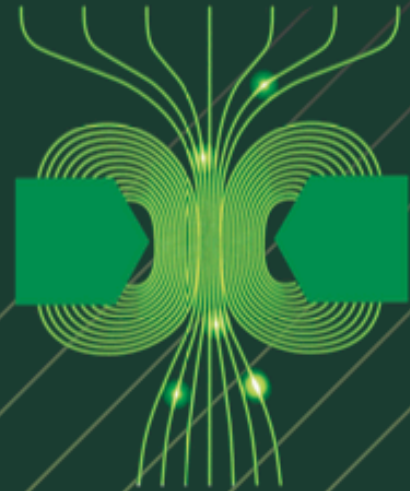


The poster for the DRD1 Gaseous Detector School 2026 features a dark green background with a pattern of diagonal lines. At the top, the title "DRD1 Gaseous Detector School" is displayed in a light green, stylized font. Below the title, the location "Facility for Rare Isotope Beams (FRIB) Michigan State University (MSU), USA" and the dates "8-17 July 2026" are listed. The central part of the poster contains several circular images: a top row with three diagrams of detector structures (a cross-section of a detector, a cross-section of a detector with a central region, and a cross-section of a detector with a central region), and a bottom row with seven photographs of various detector components and laboratory equipment. Below the images, the "Scientific program" is listed, followed by the "School website and registration" information, the "Organizers" list, and the "Contact" information. At the bottom, logos for DRD1, CERN, FRIB, and Michigan State University are displayed.

DRD1 Gaseous Detector School

**Facility for Rare Isotope Beams (FRIB)
Michigan State University (MSU), USA**

8-17 July 2026



Scientific program

- Gaseous detectors physics
- Gaseous detector technologies
- Readout technologies
- Simulation, modelling and reconstruction
- Manufacturing techniques
- Applications of gaseous detectors

The school consists of academic lectures and hands-on laboratory exercises.

The lecture program will cover MPGD, (M)RPC and wire-based detector technologies.

Lecture sessions are open to the community and can be followed in-person or by remote connection.

School website and registration

Webpage: <https://indico.cern.ch/event/1572535/>

Application deadline: 1 April 2026

Free registration for students.

Students are invited to present a poster in a dedicated session.

Organizers

Marco Cortesi, FRIB	Dinesh Loomba, UNM
Giordano Cerizza, FRIB	Reinhard Schwienhorst, MSU
Iulia-Maria Harca, FRIB	Florian Brunbauer, CERN
Daniel Bazin, FRIB	Mauro Iodice, INFN
Kondo Gnarvo, JLAB	Caleb Benetti, FRIB

Contact

drd1-school@cern.ch



DRD1 School 2027

We are looking for institutes interested to host the 2027 edition of the DRD1 Gaseous Detector School.

Existing:

- Established format with lectures and lab exercises.
- Experience in lab exercise organisation.

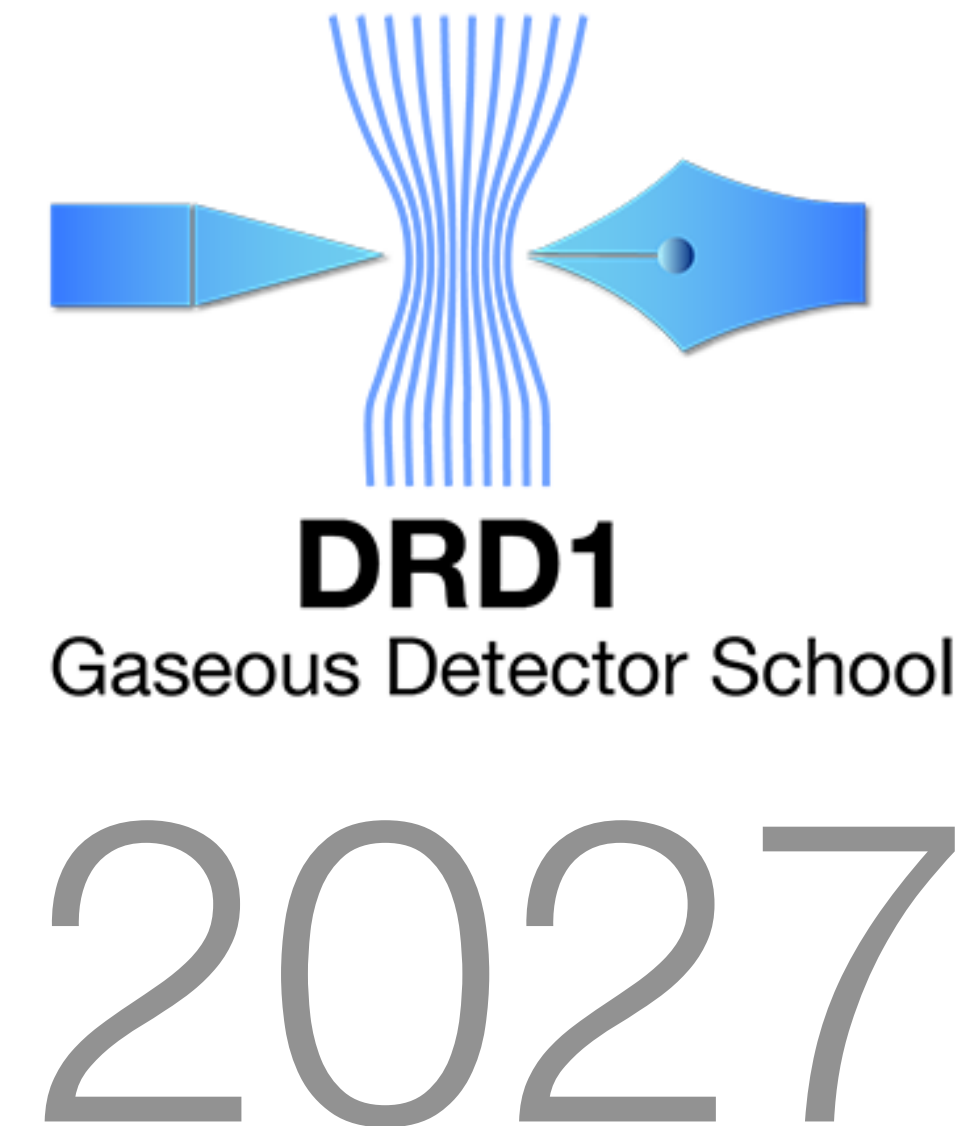
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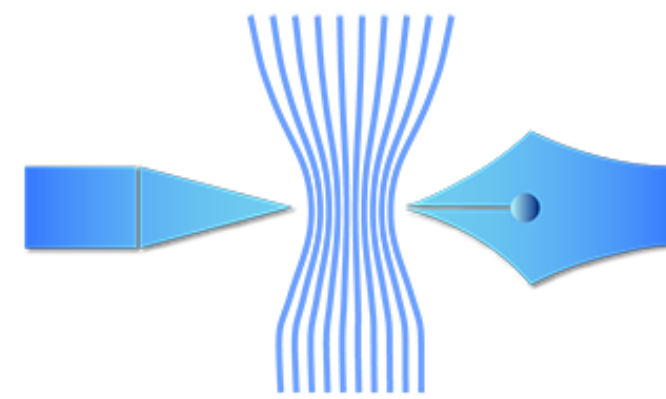
- Lab space for multiple student groups
- Lecture room

To be defined:

- Time (Spring / Summer / Fall?)
- Duration
- Number of students

If you are interested, please get in touch with us.





DRD1

Gaseous Detector School

DRD1-WG8-convenors@cern.ch