

General news

ALICE-ePIC monthly meeting, 28.05.2025

The LHC experiment collaborations at CERN receive. the Breakthrough Prize in Fundamental Physics 2025

LAUREATES

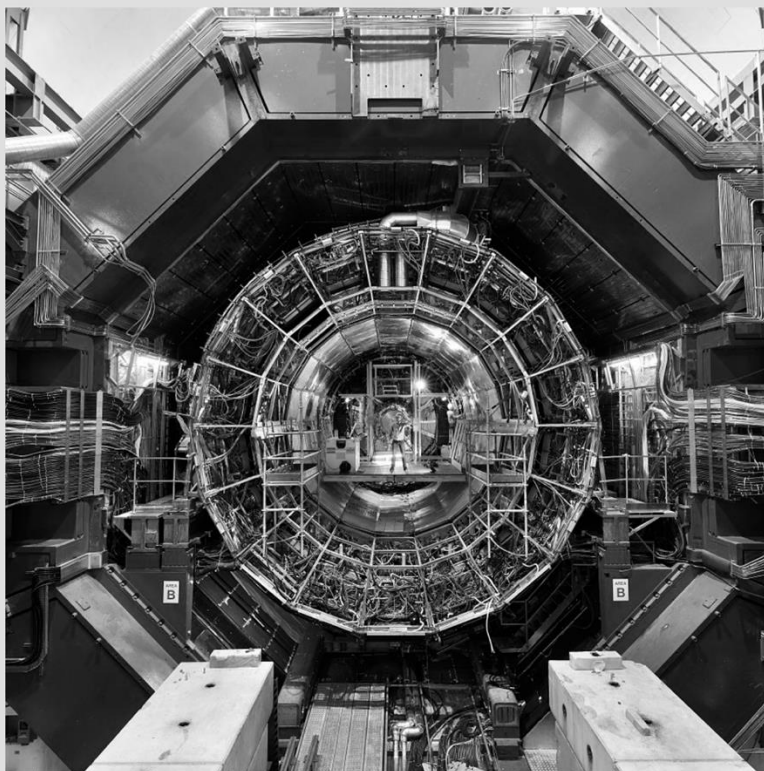
< ALICE Collaboration

2025 Breakthrough Prize in Fundamental Physics

For detailed measurements of Higgs boson properties confirming the symmetry-breaking mechanism of mass generation, the discovery of new strongly interacting particles, the study of rare processes and matter-antimatter asymmetry, and the exploration of nature at the shortest distances and most extreme conditions at CERN's Large Hadron Collider.

Marco van Leeuwen (Nikhef, spokesperson 2023 to 2025) accepted the prize on behalf of the collaboration. The \$500,000 (of the \$3 million prize) allocated to ALICE was donated to the CERN & Society Foundation for grants to doctoral students from member institutes to spend research time at CERN.

Names of the ALICE prizewinners are listed below.



CERN Press release:

<https://home.cern/news/press-release/knowledge-sharing/lhc-experiment-collaborations-cern-receive-breakthrough-prize>

Prize site:

<https://breakthroughprize.org/Laureates/1/L3992>



General news [since last meeting]

Breakthrough Prize: money will be used to support presence of PhD students at CERN



LHC running pp at $\sqrt{s} = 13.6$ TeV

Preparation ongoing for **special runs** (p-O, O-O, Ne-Ne):

- see also PF on May 14: <https://indico.cern.ch/event/1542786/>
- Dedicated analysis meetings called + dedicated mailing list (alice-light-ions@cern.ch > link to [subscribe](#))

ALICE 3 days at CERN (May 19-21): <https://indico.cern.ch/event/1533693/>

- Angelo Rivetti appointed as project leader of ALICE3/TOF unanimously by first TOF Institutional Board

Upcoming:

ESPP symposium in Venice (June 23-27):

<https://agenda.infn.it/event/44943/overview>



Upcoming:

ePIC Italia meeting in Padova (June 16-18): <https://agenda.infn.it/event/44600/>

EICUG meeting at JLAB (july 14-19): agenda in prep. at <https://indico.jlab.org/event/934/>

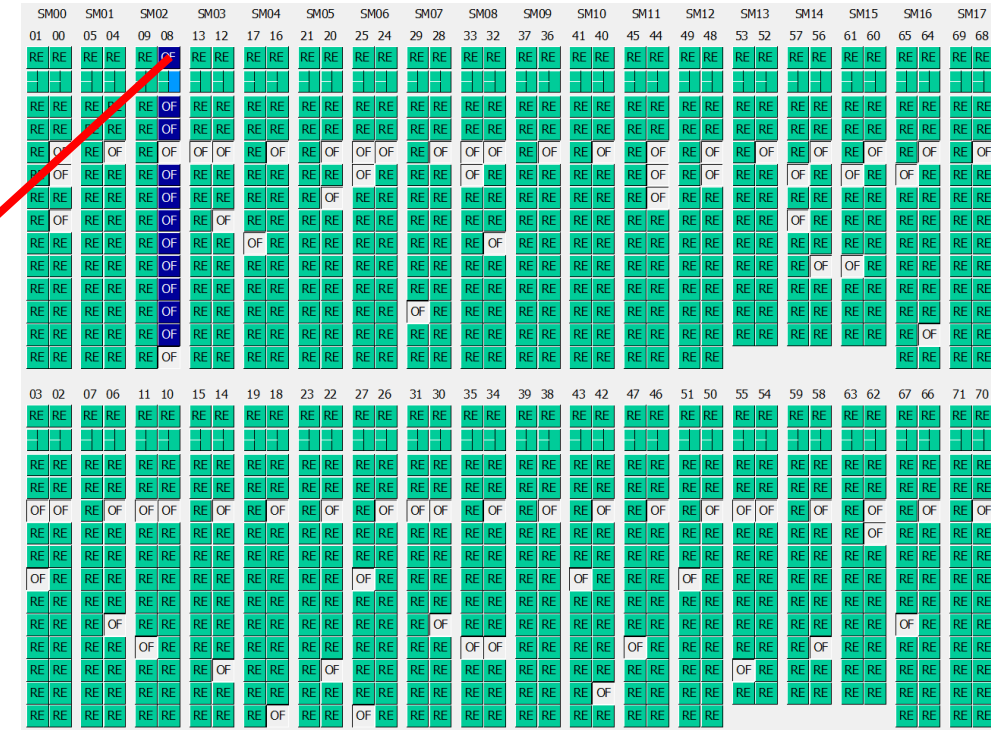


ALICE TOF operations

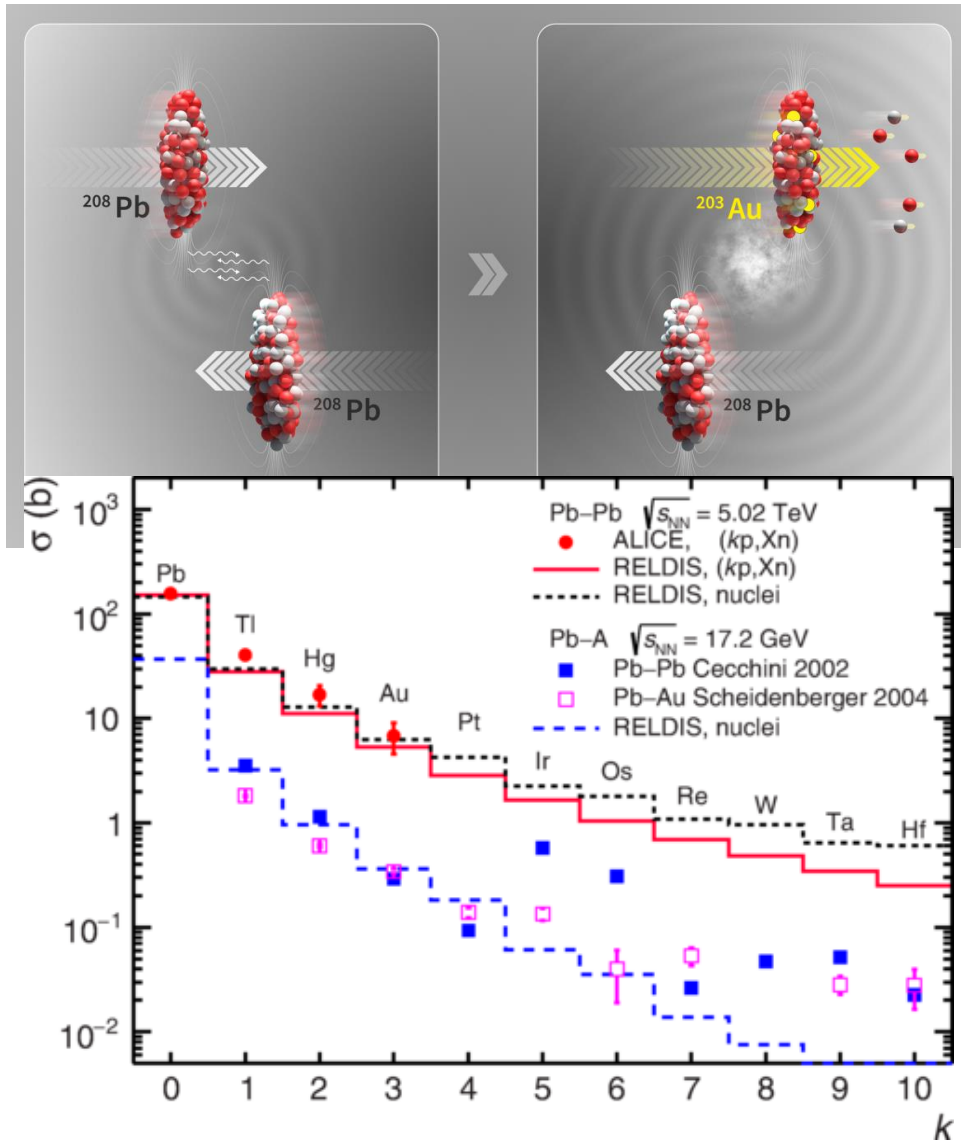
- LHC running for physics in pp $\sqrt{s} = 13.6$ TeV: reached the 2400 bunches step last Friday May 23rd.
- LHC is presently behind schedule for ~2days as last Saturday one SPS dipole magnet quenched and the recovery took few days
- Technical Stop 1 at the end of June (Mon 23 - Fri 27)
- Right after p-O, O-O and Ne-Ne (O-O at 27-35 kHz)

TOF presently running with 71/72 crates in readout.

- Latest hw intervention: CPU/eth unit replaced on CAEN SY5527 Main Frame ("alitofcaelv4")
- Next: DRM08 to be replaced (access needed)
- new DRM2 firmware to be installed also on A side (it was installed on C side on May 7th and it was fine in pp up to the highest probed rate i.e. 3.3 MHz, the latter equivalent to Pb-Pb @ 50 kHz)



Physics highlights – “Alchemy” in the 21st century



ALICE detects the conversion of lead into gold at the LHC - <https://doi.org/10.1103/PhysRevC.111.054906>

In an ultra-peripheral collision the two lead (^{208}Pb) ion beams at the LHC pass by close to each other without colliding. In the electromagnetic dissociation process, a photon interacting with a nucleus can excite oscillations of its internal structure and result in the ejection of small numbers of neutrons (two) and protons (three), leaving the gold (^{203}Au) nucleus behind (Image: CERN)

The 3p emission cross section corresponding to the production of gold nuclei is measured to be $\sigma_{3p} = (6.8 \pm 2.2) \text{ b}$ comparable to the total inelastic hadronic cross section of ^{208}Pb - ^{208}Pb collisions at the LHC, $\sigma_{\text{Pb}} = 7.67 \pm 0.25 \text{ b}$

This means that hadronic Pb-Pb collisions, [...], occur almost as often as the production of undetected and mostly unstable gold nuclei from the lead nuclei of the colliding beams.

Group & local news, upcoming events

Welcome to

- Sara Pucillo, postdoc in Salerno – strangeness in- and out-of-jets
- Francesca Casillo, master student in Salerno - antideuteron number fluctuation and antiproton-antideuteron correlations in and out of jets
- Niccolò Ciavarelli, master student in Bologna - coalescence via nucleon-nuclei correlation function
- Federico Bassan, master student in Bologna – identified hadrons via bayesian PID in- and out-of-jets

Concorso INFN – written exam on June 5 – «**in bocca al lupo**» to everyone participating!

Next meeting: wed 25 June at 10:00 – some contributions already planned

Extras

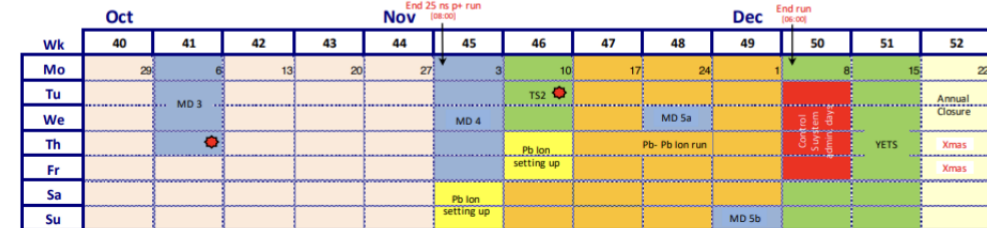
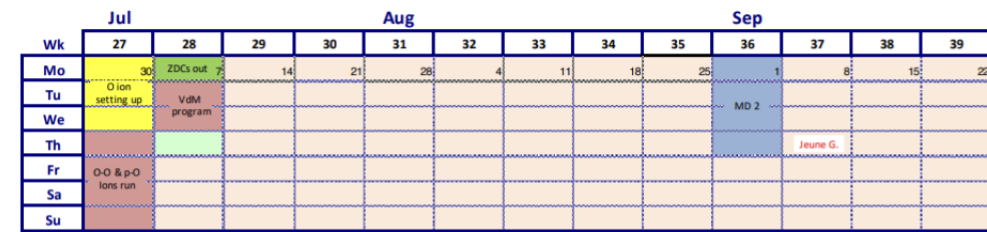
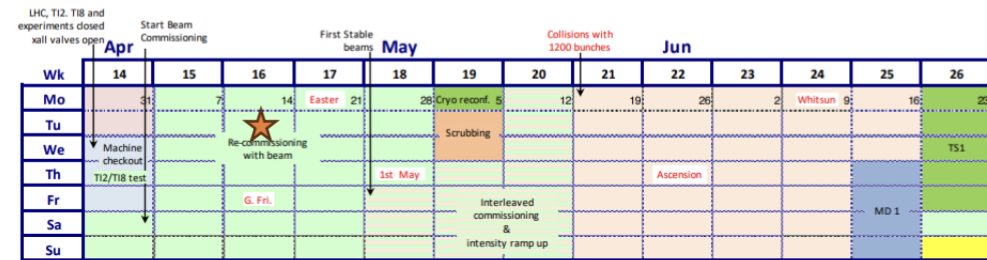
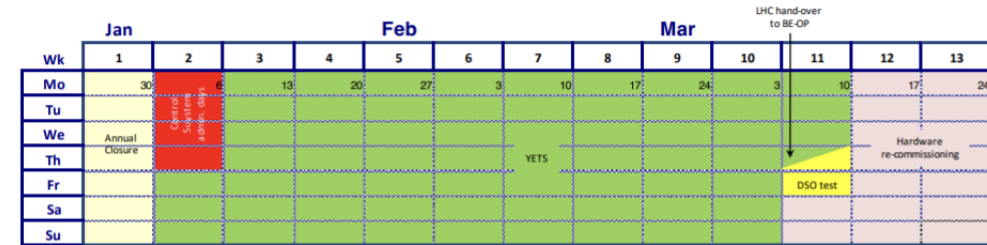
Schedule 2025

Important dates in 2025:

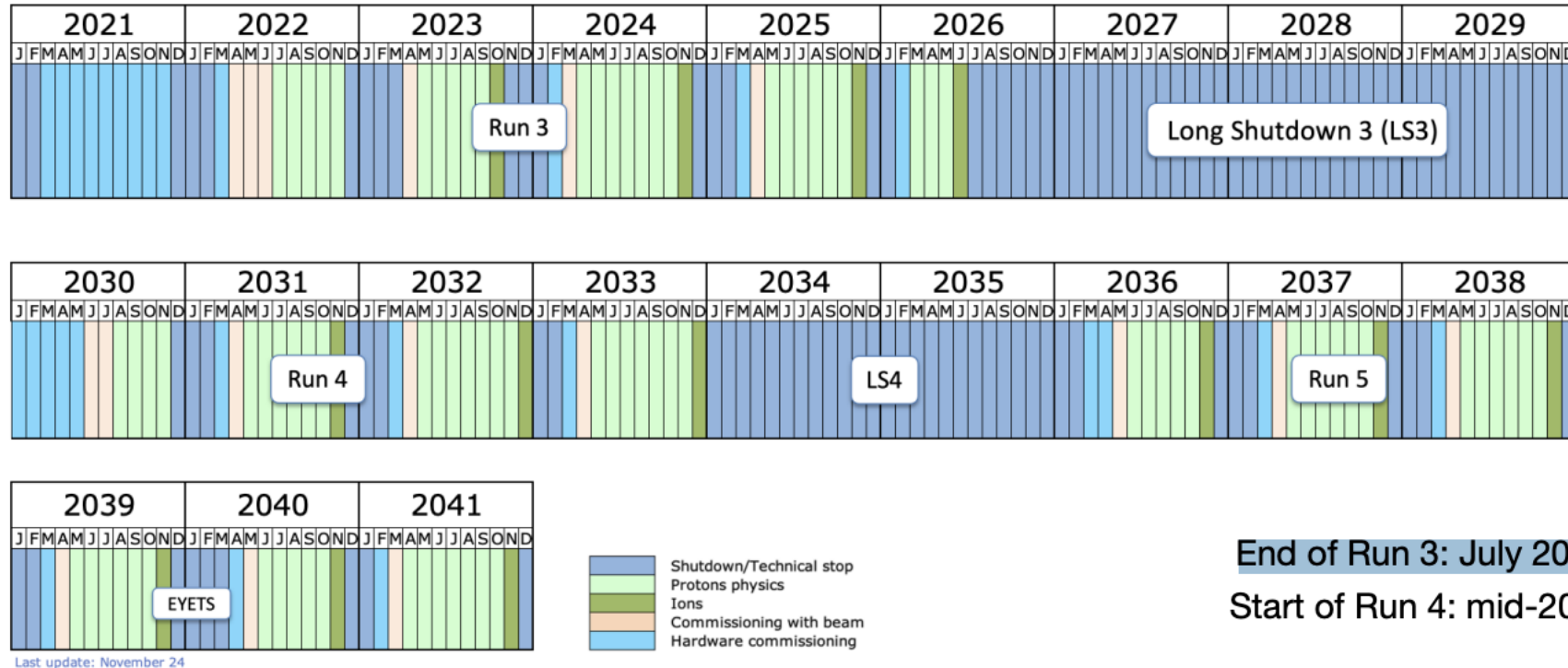
- **13th March** : LHC handover to OP
- **8th / 9th April** : Start of beam commissioning
- **16th Apr.+ Estern**: Stable beams at injection energy
- **3rd/4th May** : First Stable beams
- **19th May** : Start of physics (>1200 bunches)
- **19th – 22nd Jun.** : Machine Development I
- **23rd - 27th Jun.** : Technical Stop 1
- **29th Jun-6th Jul** : Special Run (p-O & O-O)
- **8th – 9th Jul** : VdM program (pp) (4 experiments)
- **1st-4th Sept.** : Machine Development II
- **6th-9th Oct.** : Machine Development III
- **3rd-7th Sept.** : Machine Development IV
- **8th November** : Start PbPb Commissioning
- **10th-12th Nov** : Technical Stop II
- **15th Nov-6th Dec** : PbPb Run (inc. MD 5a)



ALICE



LHC long term schedule



Long shutdown 3 has been postponed by 6 months and extended by 6 months
 ⇒ accommodate schedule drift in major upgrades of ATLAS + CMS

Re-gain about 6 months of data taking in 2026

More in RC, TC presentation

Upcoming conferences (a selection)

- ~~[32nd International Workshop on Deep-Inelastic Scattering and Related Subjects \(DIS2025\) Cape Town, South Africa](#), 24-28 March — **ONGOING THIS WEEK**~~
- ~~[Quark Matter 2025](#): Goethe University Frankfurt, Germany, 6 – 12 Apr 2025~~
- ~~[EIC Early Science Workshop](#), 24-25 April, CFNS at Stony Brook University, NY in hybrid format~~
- ~~[LHCP2025](#): Taipei, 5 – 10 May 2025~~
- [ICRC the Astroparticle Physics Conference](#), Geneva, 15–24 Jul 2025
- [EPS-HEP 2025](#): Marseilles, France, 7-11 July 2025 (abstract deadline 15/04)
- [Initial Stages 2025](#), Taipei, 8-12 September 2025 (abstract deadline 20/04)
- [3rd workshop on Synergies between the EIC and the LHC](#), 22-24 Sept. 2025, Kraków, Poland (abstract deadline August 15)

More on [ALICE Conf. Comm. webpage](#) and [EICUG website](#)

Upcoming schools (a selection..)

- [The XXIII Bonaudi-Chiavassa Int. School of Particle Detector](#), Cogne, Italy, 23-27 June.
Registration deadline 20 June
- [International School of Nuclear Physics, 46th Course: QCD under extreme conditions - present and future](#), Erice, Sicily, 17-21 September 2025.
Call for abstracts submission deadline: 1 July 2025.
- [Machine Learning for Physics school](#), University of Ljubljana, 26 June - 2 July,
Registration deadline 4 May
- [Second European School on the Physics of the EIC and Related Topics](#), Benicassim, Spain, 22 June – 2 July
Registration deadline 30 April
- [2025 European School of High-Energy Physics](#), 15 - 28 October 2025, in Benasque, Spain
Registration deadline 23 May

Regular appointments

- **ALICE-ePIC monthly: last wed. of the month at 10:00** – ref. Pietro, Andrea, Roberto, FrancescaB, Manuel
- ePIC Bologna: Mondays at 11:00 – ref. Roberto
- ALICE-TOF QC coordination: Mondays at 12:00 – ref. Francesco+FrancescaE
- CosmicAntiNuclei / ALICE analysis: Tuesdays at 11:15 – ref. FrancescaB+Neelima
- Lab meeting / ALICE3: Wednesdays at 9:00 – ref. SofiaS e FrancescaC
- ALICE-TOF maintenance, operations, upgrade and QC: Wednesdays at 11:00 – ref. Manuel+SofiaS.

+ collaboration meetings...



<https://agenda.infn.it/category/566/>

CosmicAntiNuclei meetings

TOF bi-monthly meetings

Bologna Lab meetings

ALICE3

TOF operations and QC

ALICE - ePIC monthly meetings