

Welcome to the ISOLDE Workshop and Users Meeting 2024

Kindly sponsored by:



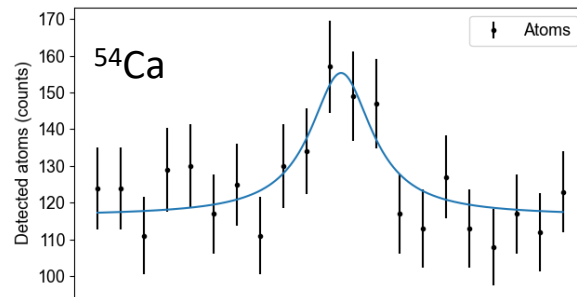
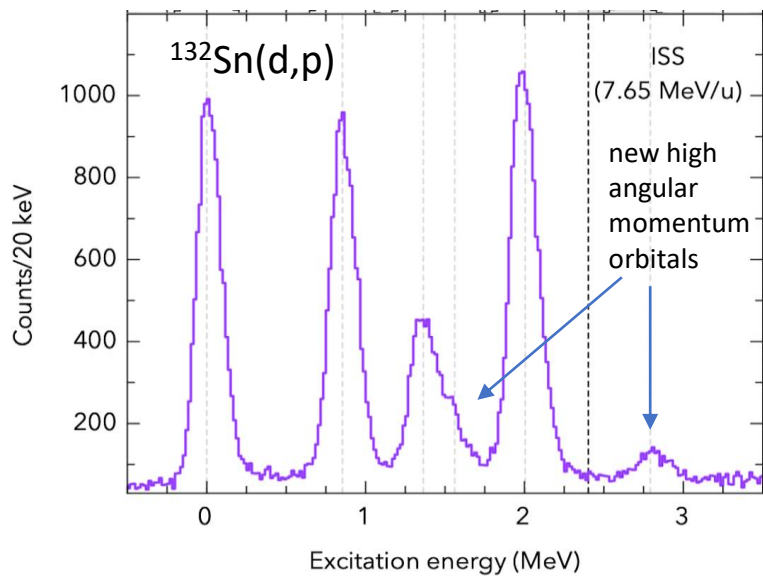


This year's workshop is dedicated to the memory of Bruce Marsh and Mats Lindroos.

2024

- Delivered beams to around 50 INTC Proposals and Letters of Intent, including 9 HIE-ISOLDE experiments.
- More than 420 shifts for physics and machine development.
- Includes two weeks winter physics for CRIS and IDS.
- A little less than previous years – more unlucky on issues and challenges (e.g. two power cuts during HIE-ISOLDE runs).
- But remember, our ATS colleagues are running a complex facility for our science – “thank you for your expertise and your dedication”!
- Plenty of interesting science...

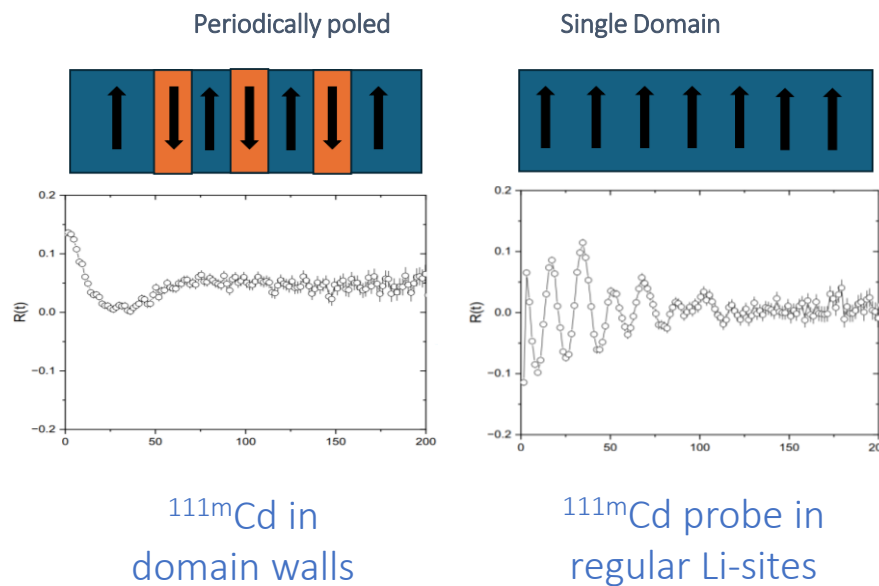
Late arriving news – 1716 visitors toured with 231 guides – thank you!



^{53}Ca $T_{1/2}: 461 \text{ ms}$ 6 ions/s	^{54}Ca $T_{1/2}: 90 \text{ ms}$ 1 ion/s
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Lithium niobate an interesting ferroelectric material used in optical wave guides, mobile phones and piezoelectric sensors



Decision Timeline for the ISOLDE Improvement program

Consolidation and improvements up to and during LS3: 2 GeV, proton dumps, fire safety improvements, reliability of REX, maintaining the long-term performance of SC linac, review/cons target systems and low energy lines...

ISOLDE Mini-workshop on Consolidation and Improvement program (October 2022)

To collect needs for consolidation and improvement of the facility based on physics needs and facility life-time

ISCC (November 2022)

To state collaboration clear interest and support to the improvement program, in particular to the 2 GeV case

Strategy presentation to JAPW of integrated improvement program (December 2022)

To define overall project to coordinate consolidation and improvement needs

RB (December 2022)

To approve proposed roadmap for final approval

IEFC: IBDRS and 2 GeV technical implementation proposal (January 2022)

To endorse technical solutions and timeline for

implementation

INTC (February 2023)

To re-state on physics program and interest on 2 GeV

RB (March 2023)

Input from INTC on physics thanks to proposed improvement program and conclusions from IEFC about technical implementation

MTP 2023

ATS to put urgent items for MTP2023

Cost, Schedule and Scope Review (December 2023)

To review project definition, risks, and resources

MTP 2024

ATS to put forward rest of consolidation and improvement program with horizon between 2023 and post-LS3

In a very difficult financial climate...



CERN MTP/CONS

MTP 2024 – 3.8 MCHF for primary area ventilation and fire safety improvements.

MTP 2025 – 13.0 MCHF for proton beam-dump replacement.

CONS – 2.2 MCHF 101 MHz systems of REX HLRF/LLRF (RFQ, HIS, 7GP1-3)

CONS – 2.0 MCHF BTY Line power converters compatible with 2 GeV.

CONS – 200.0 kCHF last focussing doublets on BTY line.



REQUESTS TO MTP/CONS (in preparation)

BTY – remaining magnets and reconfiguration of vertical bend for 2 GeV delivery.

REX 202 MHz systems (9GP)

Refurb CM1?

Several other elements: LHe dewar implementation, REX additional pumping, REX Trap improvement, RILIS space, ...



More in Joachim's talk...

Long-term schedule for accelerator complex

(version 5th Nov 2024- still needs final approval)

PSB down:

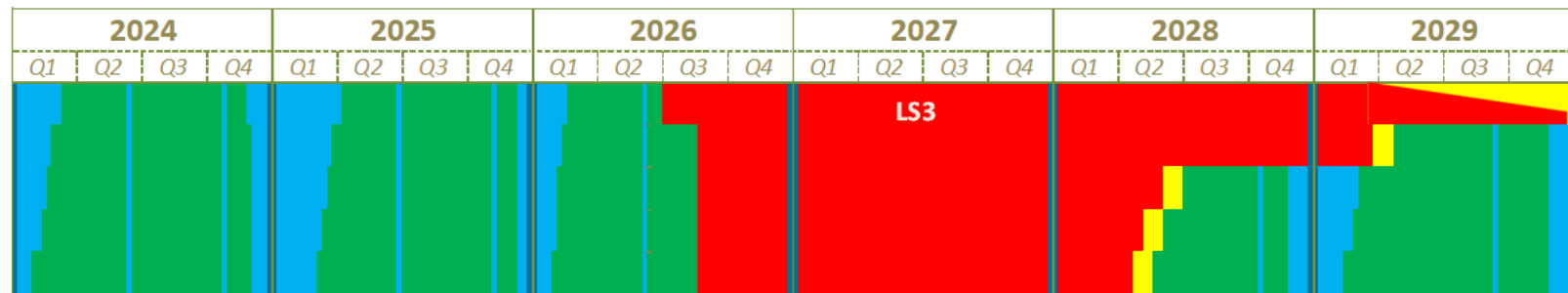
1st Sept 2026 to Q2 2028

Beam Dump Replacement:

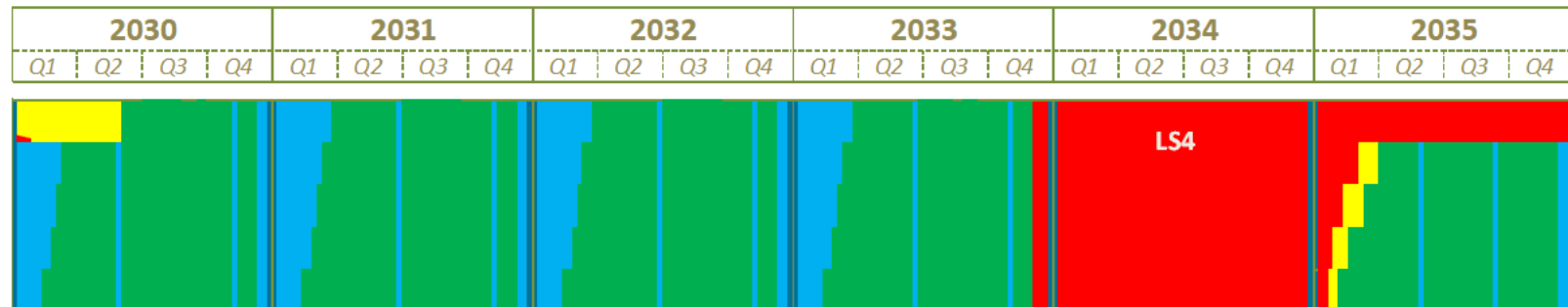
two years

*Align two periods at start or at end?
Matters because HIE-ISOLDE running only in second half of calendar year and potential for more resource outside of LHC LS3.*

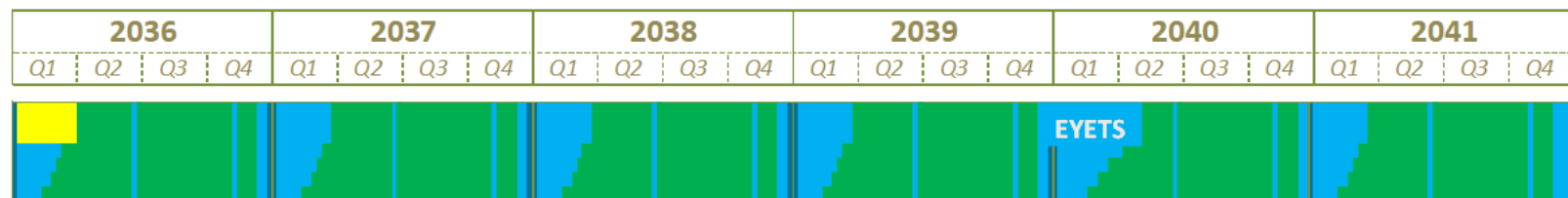
LHC
SPS
PS
PSB
L4



LHC
SPS
PS
PSB
L4



LHC
Injectors



■ Long Shut-down
 ■ (Re)Commissioning
 ■ Operation
 ■ Technical Stops

Discussions with ATS and ISCC: prioritise scenario of starting beam-dump replacement at end of 2025 and be ready to take protons asap in 2028, making the most of low and high-energy physics across the three-year period (2026-2028) and possibly potential to take advantage of mis-alignment with LHC LS3 to refurbish CM1 and help ease other technical risks – **several uncertainties we will need to carry as risk.**

More in Joachim's talk...

EURO-LABS running for 2 years.

1st Sept 2022 to 31st Aug 2024 supported 329 researcher-visits on 77 experiments at ISOLDE
Mostly early-stage researchers or first-time users.

A reminder to spokespeople of the obligations of support:

(i) Acknowledge EURO-LABS support on all publications, talks, data releases etc:

“This project has received funding from the European Union’s Horizon Europe Research and Innovation programme under Grant Agreement No 101057511.”

(ii) Open Access Publications.

(iii) Open Data.

ISOLDE, CERN and many other institutions and funders have policies and requirements on Open Science – reasonable alignment.

Safety Update

Thank you: In response to a serious incident in 2023, all safety documentation has been reviewed and updated, mainly by those responsible for day-to-day maintenance and operations of instruments.

HSE Review: Underway – waiting for outcome.

GLM/GHM: During a ^{111m}Cd PAC campaign in summer, three separate incidents (following incidents in previous campaigns) resulted in suspension of activities. Response to these incidents has just been submitted to EP Management.

Reminder: Ensure that all written procedures are followed to the letter – use as check list as the procedure is performed. If procedure presents issues, either matters of safety [STOP!] or ease of undertaking activity, then EP Safety will help with modifications, but nothing should be changed until approved.

Follow PPE and other requirements in the hall.



Letizia Di Giulio and Theo Vafeiadis



James Devine



A few things from Hanne

SC40 Keys: Please return unless you are at CERN for extended periods – for short periods, one is available in the Tracker Box in 508.

Recruitment of Technician: Underway – waiting for outcome soon.

Crane in the Hall: Laser-guiding system is being installed, and crane should be back in use for those who have approval to use it.

New processes for radioactive sources and a better system to log and track contaminated equipment and samples.

He's not here yet – but remember to congratulate him!

Klaus Blaum – winner of the 2025 Stern-Gerlach Medal, the highest award of the DPG for outstanding achievements in the field of experimental physics. It is awarded for work from the entire field of physics.

‘In honour of his pioneering developments of Penning ion traps into spectroscopic precision measuring instruments and their applications for tests of the four fundamental interactions, their symmetries, the fundamental constants and thus the standard model of particle physics.’



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Marek Pfützner – winner of the 2025 Marian Smoluchowski-Emil Warburg Prize

is awarded jointly by the Polish Physical Society and the German Physical Society for outstanding contributions to pure or applied physics in memory of the work of Marian Smoluchowski in Poland and Emil Warburg in Germany. The prize was established with the help of the Meyer-Viol Foundation. It is awarded every two years, alternately to a physicist who lives and works in Germany or Poland.

‘For his breakthrough discovery of two-proton ground-state radioactivity, the least known nuclear decay mode, predicted more than 40 years before.’



ISOLDE Improvements beyond LS3...

ISCC have compiled a very long spreadsheet of possibilities from Linux machines in the DAQ room (done!) to high power/energy ISOL facility using a new proton injector complex (maybe later on!)....

ISOLDE Workshop 2025...

Jenny was having problems finding space in 2025, probably now solved.
May end up having to do something different for the Workshop in the future!



...but these will be jobs for the next Collaboration Spokesperson!

The ISCC has chosen its preferred candidate for....

The new ISOLDE Physics Section Leader and Collaboration Spokesperson – Luis Fraile

....subject to confirmation by a CERN Recruitment Board.

Expected timescale:

1st July 2025 Luis starts 😊 😊

31st July 2025 Sean leaves 😞 😞



Enjoy the Workshop!



home.cern

Now he's here, we can congratulate him properly!

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'In honour of his pioneering developments of Penning ion traps into spectroscopic precision measuring instruments and their applications for tests of the four fundamental interactions, their symmetries, the fundamental constants and thus the standard model of particle physics.'



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7:15 pm Cafe Papon - Rue Henri-Fazy 1, 1204 Genève – Geneva Old Town overlooking Parc Bastions

Take an 18 tram from CERN – every ten minutes – journey time 31 minutes - 3 CHF ticket one way.

5 min walk to the cafe from Place de Neuve – take Rampe de la Treille.

NB: Place de Neuve temporary stop – after Bel Air!



WARNING – I believe the last tram back to CERN from Place de Neuve is 00:21 – but I'm NOT responsible if you have to walk home! First tram back to CERN 04:25 – in case you want a really good night out!