ISOLDE report
INTC 77

November 2024 - Hanne Heylen

INTC 77 summary

Row Labels	Count of CDS #	Sum of Shifts requested	Sum of Protons requested
ISOLDE	**20**	**384**	**0**
Addendum	4	66	0
Letter of Clarification	2	21	0
Letter of intent	2	11	0
Proposal	12	286	0
nTOF	**6**	**0**	**1.41E+19**
Addendum	1	0	1.5E+18
Proposal	5	0	1.26E+19
Grand Total	**26**	**384**	**1.41E+19**

Only low E

1 shifts = 8 hours; 1 day~ 1 x 10^{17} protons

ISOLDE – shifts on the books

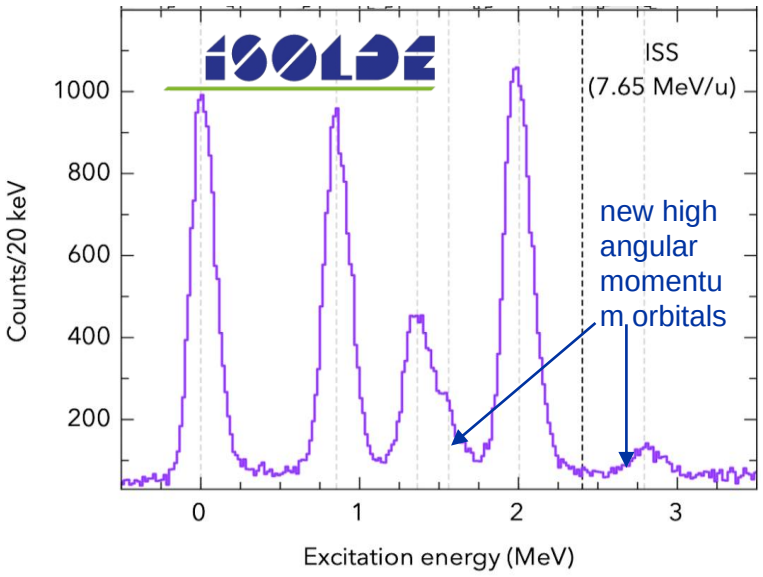
Only low E

Row Labels	Count of Experiment	Sum of Shifts remaining after INTC 76
Experiment	**72**	**799.5**
biophysics	1	2.5
COLLAPS	1	8
COLLAPS/ISOLTRAP	1	13
Collections	4	69
CRIS	9	127.5
Decay spectroscopy	1	8
Gandalph	2	23
IDS	12	139.5
IDS, ISOLTRAP, RILIS	1	21
IDS/TAS	1	3
ISOLTRAP	8	80
LA1/ECSLI	1	13
Medical physics	2	20
MIRACLS	1	17
SSP	18	173.5
TAS	4	6.5
TISD	1	9
Travelling Setup	1	19
VITO	2	23
WISARD	1	24
LOI	**29**	**172**
COLLAPS	1	2
COLLAPS/TISD	1	4
CRIS/Gandalph	1	3
ISOLDE upgrade	1	0
MIRACLS	1	6
SSP	4	30
SSP/TISD	1	3
TISD	13	76
TISD/CRIS	1	13
TISD/IDS/ISOLTRAP	1	6
TISD/ISCOOL	1	6
TISD/ISOLTRAP	1	11
TISD/TDPAC	1	4
VITO	1	8
Grand Total	**101**	**971.5**

- Status:
  - **Includes** approved proposals during last INTC
  - **Excludes** shifts delivered in 2024
- On average:
  - ~500 scheduled shifts each year
    - ~350-400 for low E
  - 40-50 experiments per year
    - 30-40 for low E

Highlights

Simon Stegemann will replace Sebastian Rothe in target team

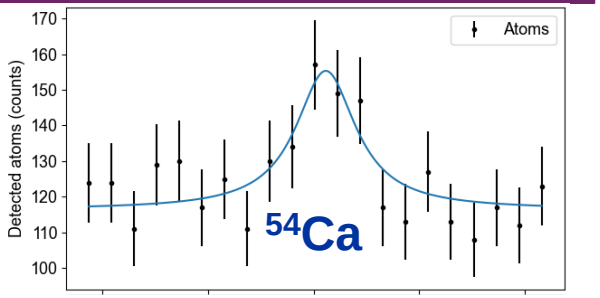


IS742 - ^{132}Sn(*d*,*p*)^{133}Sn @ISS

- High angular momentum single-part. states outside double-magic ^{132}Sn.
- For the first time, ALL the valence single-neutron orbitals outside the doubly-magic core have been observed.

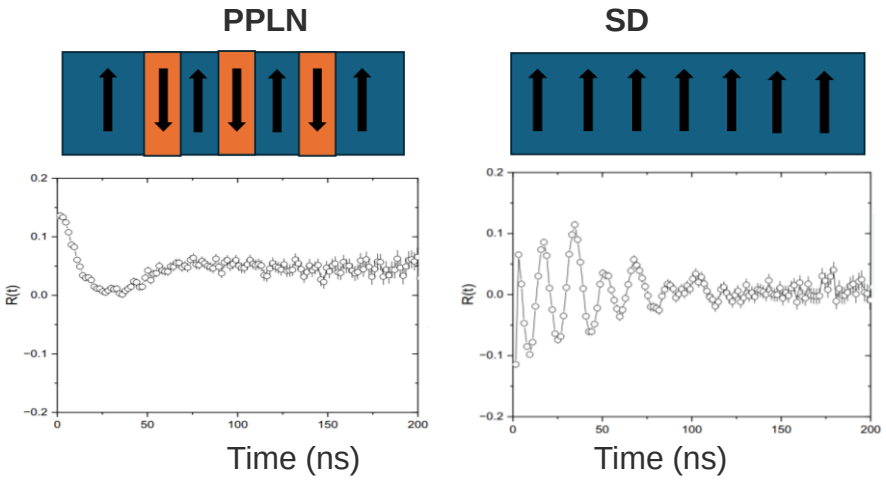
IS529 – 54Ca @COLLAPS

- Shed light on the magic nature of the *N=32* and *N=34* shell closure
- Sensitivity record : First collinear laser spectroscopy with < 1 ion/sec, using ROC technique



^{53}Ca
$T_{1/2}$: 461 ms
6 ions/s

^{54}Ca
$T_{1/2}$: 90 ms
1 ion/s



^{111m}Cd probe in the domain walls

^{111m}Cd probe in regular Li-sites

IS760 - Lithium Niobate Domain Walls

- Single domain poled (SD) and periodically poled lithium niobate (PPLN) samples were investigated using ^{111m}Cd and the PAC technique
- Significant improvement in terms of understanding the local scale phenomena important for applications in photovoltaic and nanoelectronic devices.

ISOLDE schedule

2024

- Protons for physics to ISOLDE from 8 April – 25 November (4 weeks longer than originally foreseen ☺)
- Winter Physics (low E only) until 9 December
- Separator course 10-11 December

2025

- Preliminary 2025 schedule: 28.3 - 8.12 (protons for physics)

LS3

- LS3 for ISOLDE: **most likely** no physics in 2026 and 2027, restart in Q2 2028 (not aligned with LS3 for LHC)
  - Final decision in the coming weeks/months

Issues since June

- After a series of incidents in June, no runs in GLM/GHM and 508 offline labs allowed (until the end of the year)
  - Affects solid state physics runs (Moessbauer, PAC, EC-SLI, …) and all collections
  - GLM/GHM runs can run in parallel to central beam line → negative effect on shifts for physics

- 2 power cuts (2nd Sep., 17th Oct.) during HIE-ISOLDE run → followed by several shifts of recovering everything before runs could resume in good conditions

- Several runs on HRS using RILIS experiences instable beam (unclear reason, no problem on GPS)

- IS702 (132Sn for Miniball) was cancelled before it started due to target problems

- Missing mass marker for CRIS run, required ad-hoc target change

- On top of the several issues with targets, beam instrumentation, REX/HIE-ISOLDE
  - 9-Gap
  - Cavities tripping (intervention)
  - Target degrading
  - Broken of tape in tape station
  - Faraday cups breaking
  - …

Relatively difficult year