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ISOLDE

Results from the ISOLDE Decay Station 2016

Razvan LICA, PhD student

CERN, Switzerland

IFIN-HH, Romania

ISOLDE Workshop and Users meeting
8 December 2016

Contents

- The ISOLDE Decay station
  - Motivation
  - Experimental setup
  - 2016 Experimental Campaign Overview

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- Highlights from 2016
  - IS605: Absolute measurement of the βα decay of ^{16}N (Presentation by K. Riisager)
  - IS609: Study of β-delayed neutron decay of ^{8}He
  - IS610: Gamma and fast-timing spectroscopy of the doubly magic ^{132}Sn and its one- and two-neutron particle/hole neighbours (Poster by M. Piersa)
  - IS588: Core breaking and octupole low-spin states in ^{207}Tl (Poster by T. Berry)

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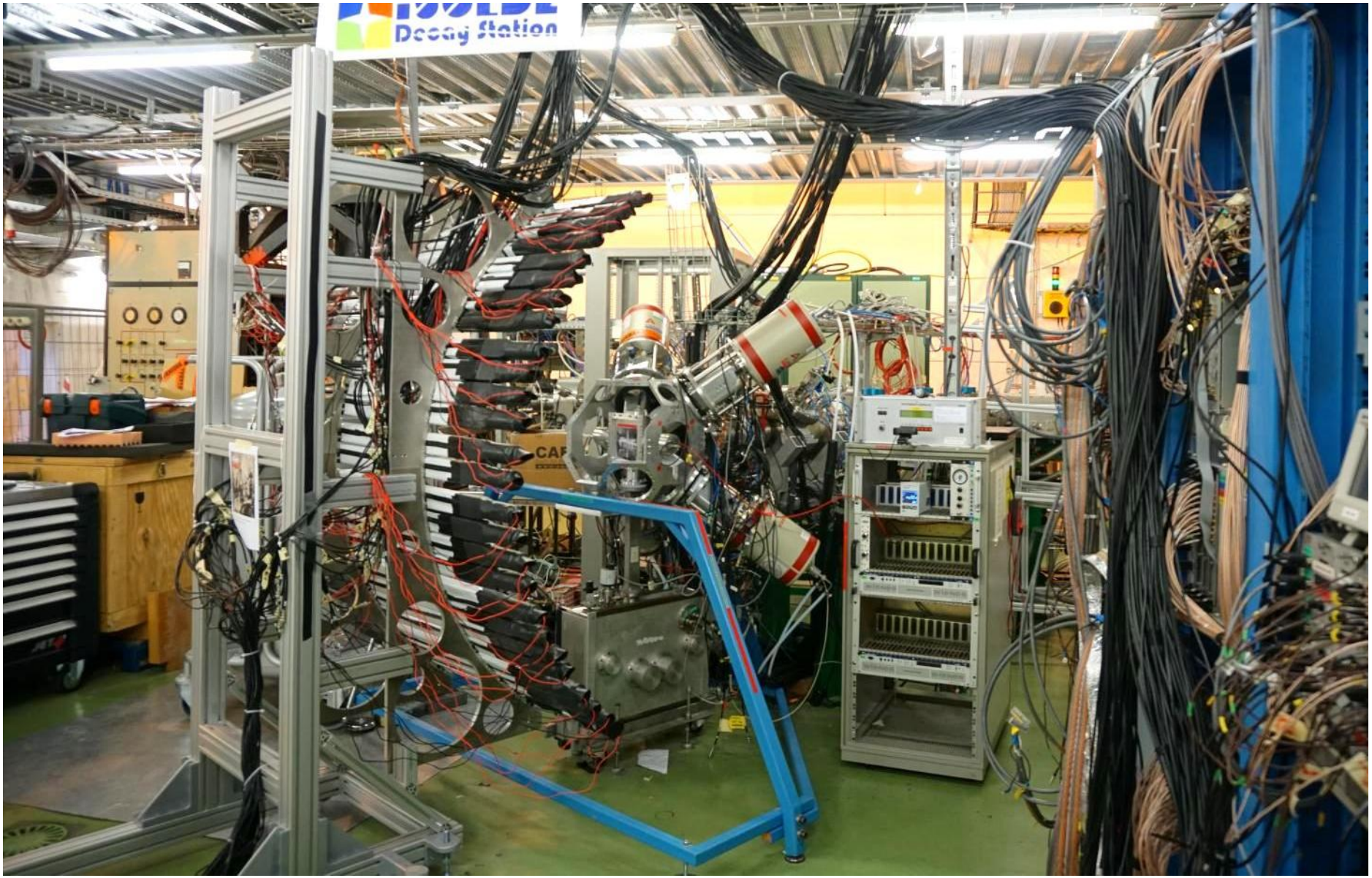
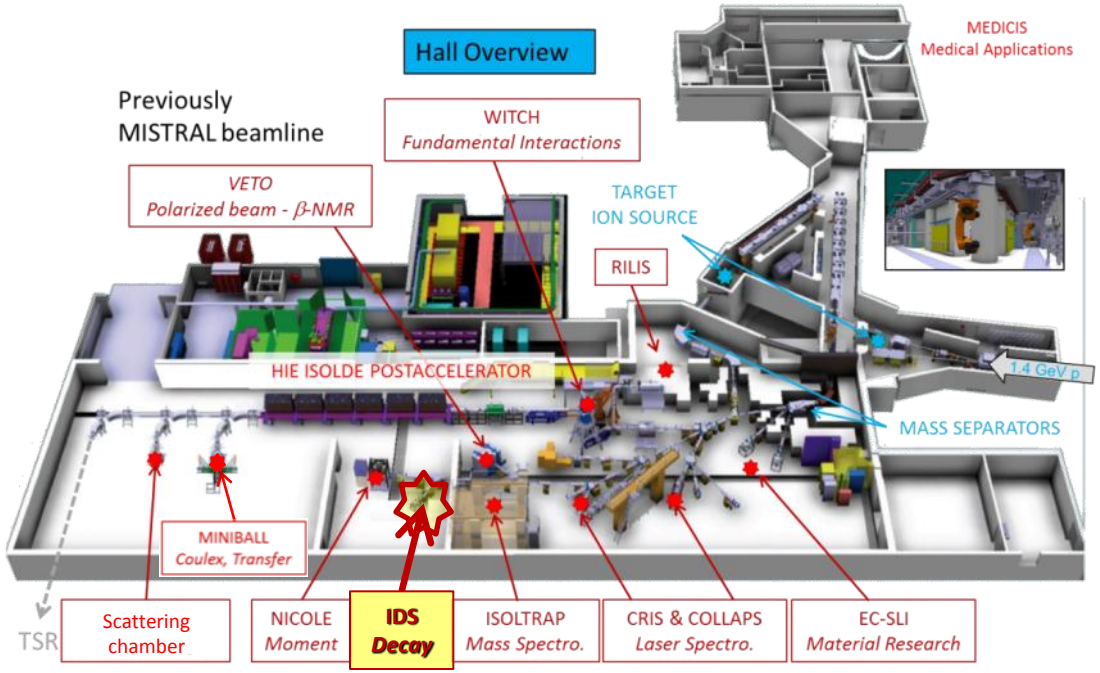
- Publications from IDS
  - Fast-timing study of the l-forbidden $1/2^{+} \rightarrow 3/2^{+}$ M1 transition in ^{129}Sn — *R. Lica et al., PRC 93 044303, (Apr 2016)*
  - Beta-delayed proton emission from ^{20}Mg — *M. V. Lund et al., EPJ A52, 304 (Oct 2016)*

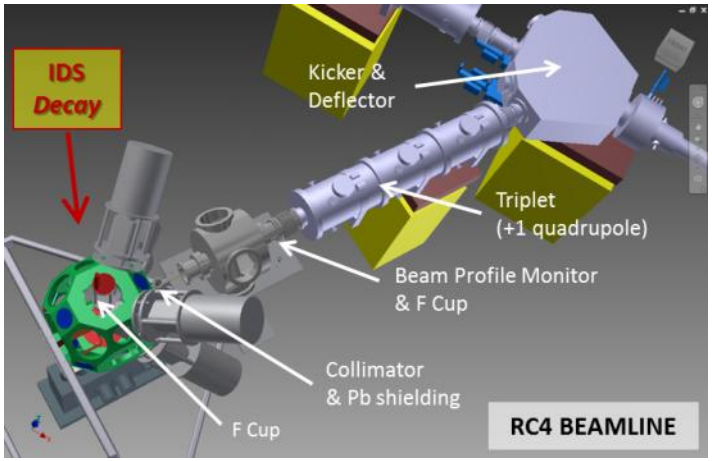
- Outlook

The ISOLDE Decay Station



Scientific motivation and experimental setup/technique





Scientific motivation and experimental setup/technique

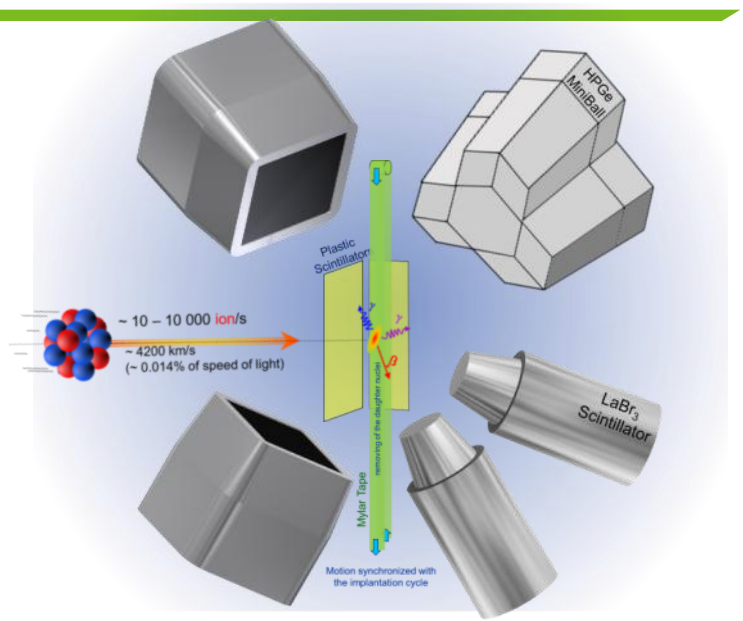
The **I**SOLDE **D**ecay **S**tation (**IDS**) project aimes to provide:

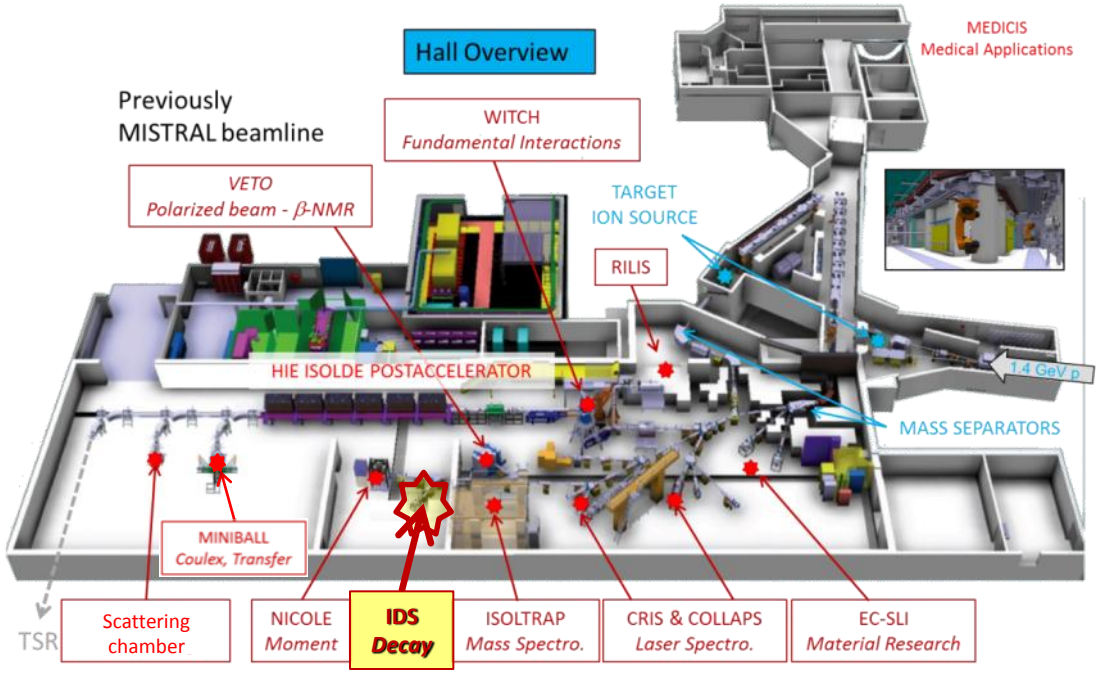
- **Permanent** Setup for decay studies using the RIB from ISOLDE
- **Flexible** (for several decay types or studies)

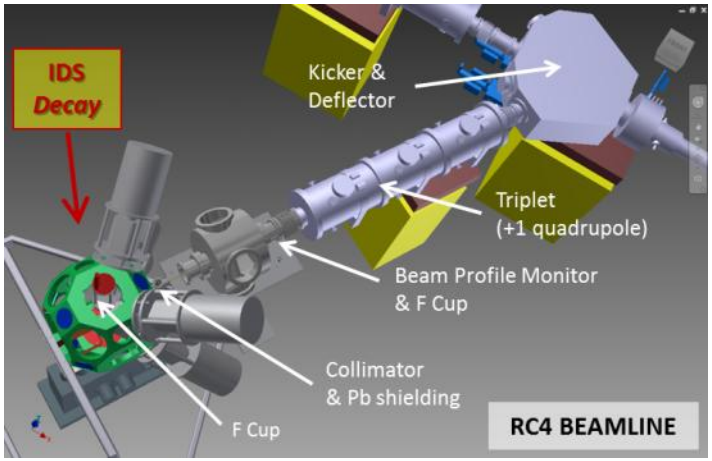
Approach:

- **HPGe detectors** (4 permanent Clovers + extra)
- **Ancillary detectors** ($LaBr_3$, plastic scintillator, silicon, neutron)
- **Tape station**

- **Collaboration** to support and perform decay studies at ISOLDE





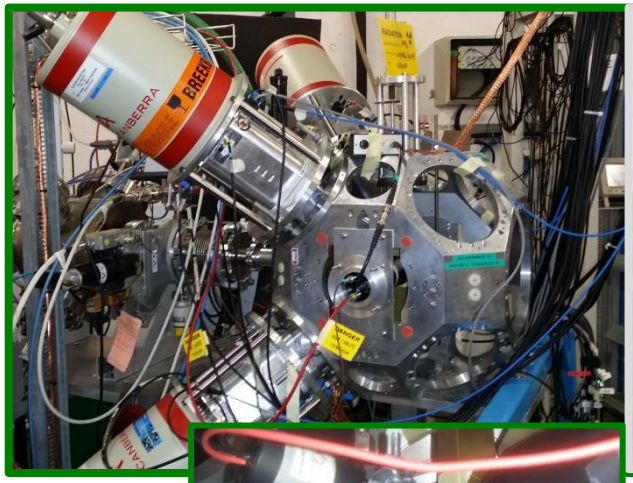


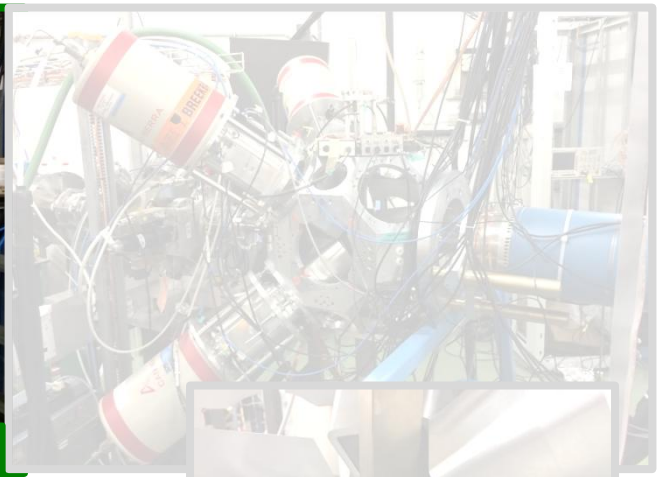
Experimental setup: Detectors 2014

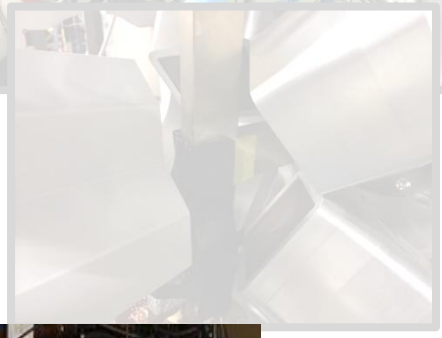
Life Time Measurements

High efficiency Gamma Spectroscopy

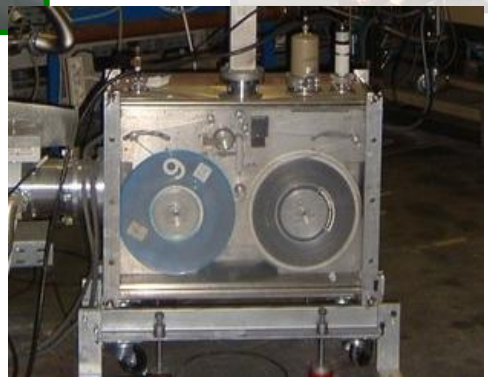
Charged Particle Spectroscopy







- Implantation on Tape
- 4 Ge Clovers at Backward angles
- 2 $LaBr_3$
- 1 plastic scintillator
- IS579,IS590
- Data on ^{129}In, $^{148-150}$Cs, ^{68}Ni



IDS Tape Station

Experimental setup: Detectors 2014

Life Time Measurements

- Implantation on Tape
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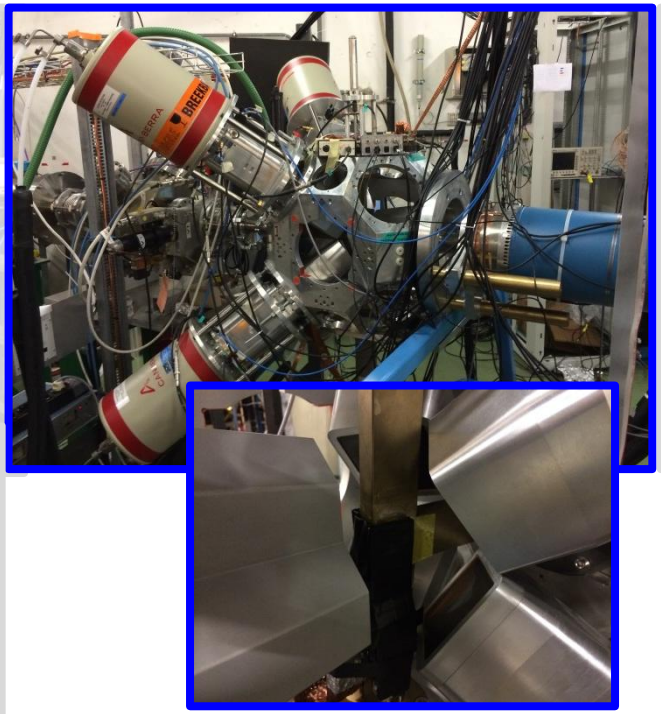
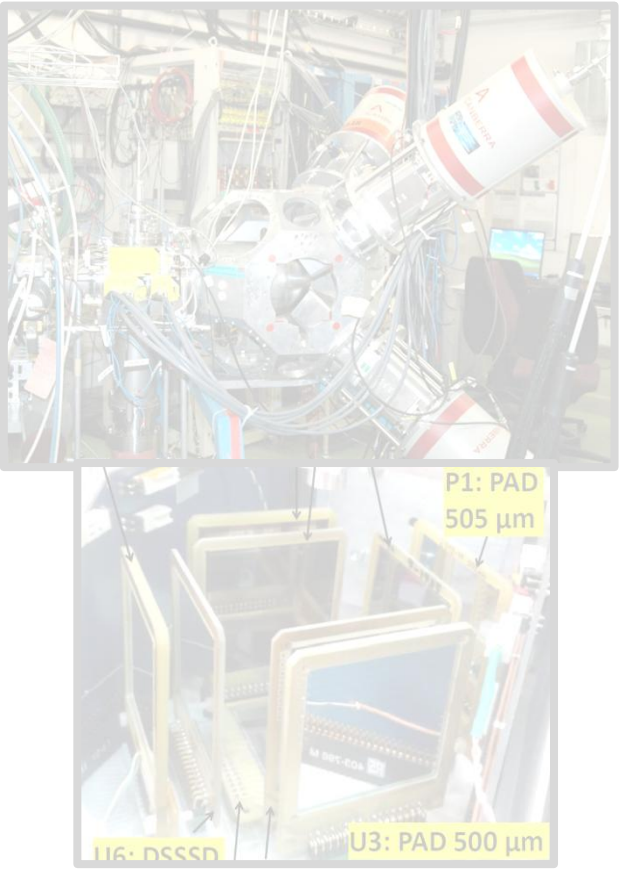


- Implantation on Tape
- 4 Ge Clovers at Backward angles
- 1 Miniball Detector (triple cluster)
- 3 plastic scintillators
- IS588 ^{207,208}Hg

Charged Particle Spectroscopy



Experimental setup: Detectors 2014

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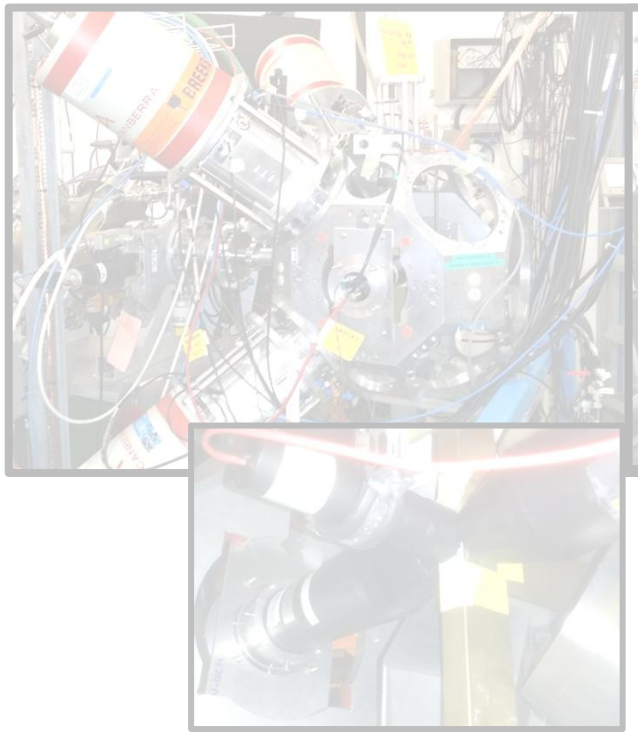

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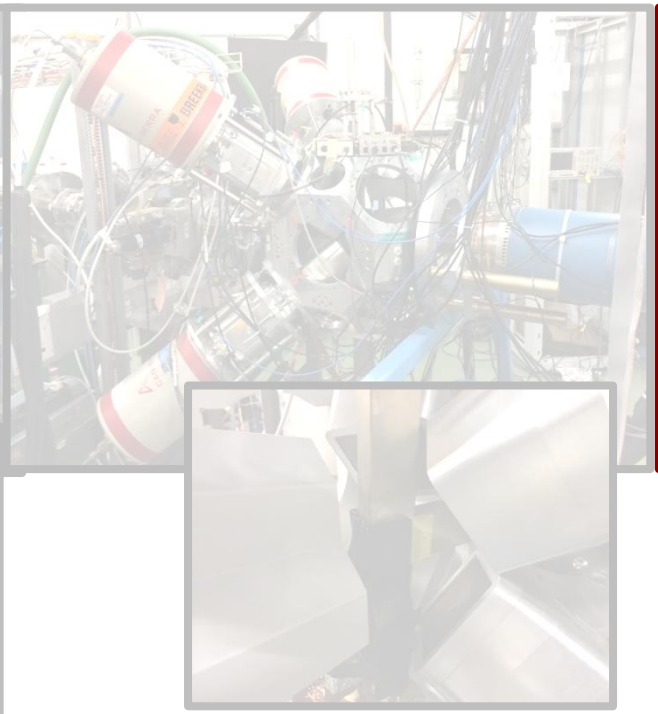

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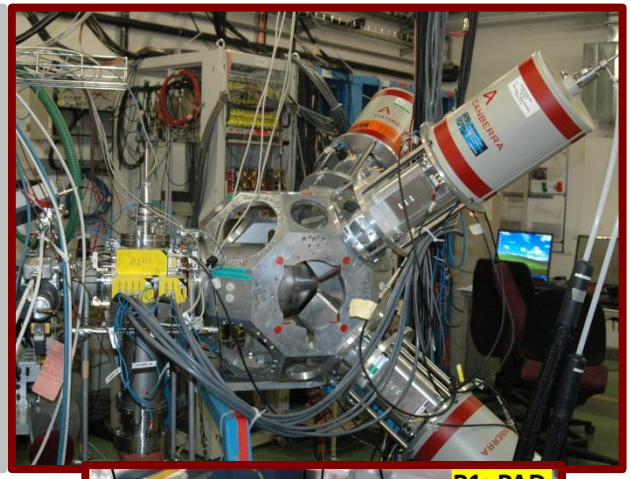
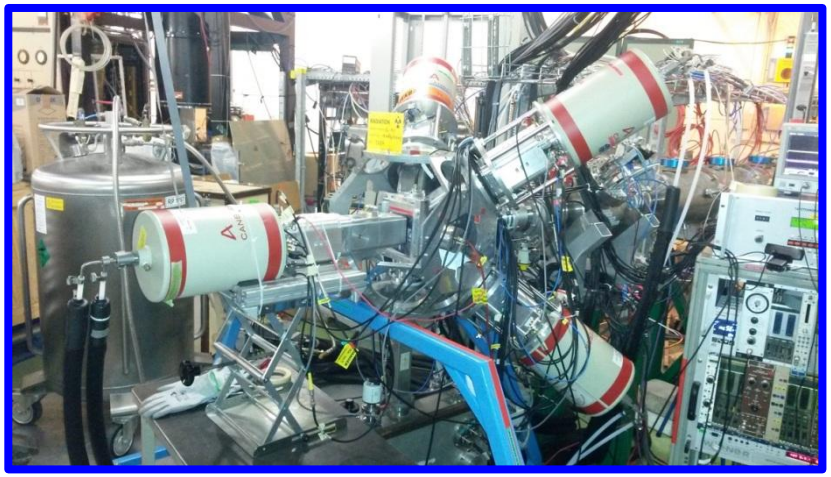
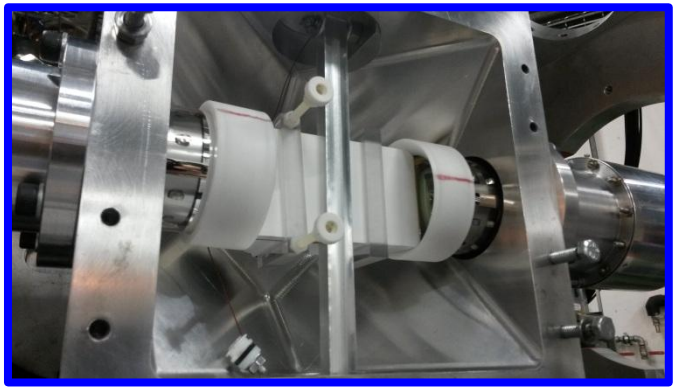


- Implantation on C foil
- 4 Ge Clovers at Forward angles
- Si box
- IS476 ^{31}Ar, IS545: $^{112\text{-}118}$Ba, IS507 ^{20}Na

Experimental setup: Detectors 2015

High efficiency Beta-Gamma Spectroscopy





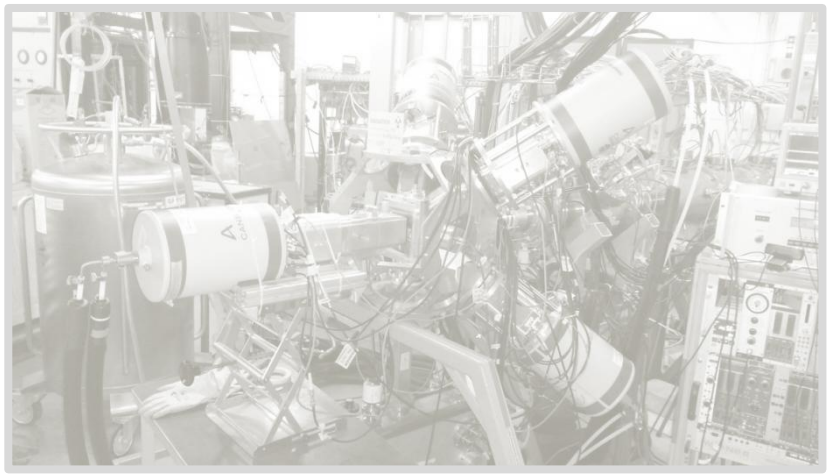
- Implantation on Tape
- 5 HPGe Clovers
- 1 central plastic scintillator of >90% efficiency
- IS530: $^{34-35}$Mg, $^{34-36}$Al

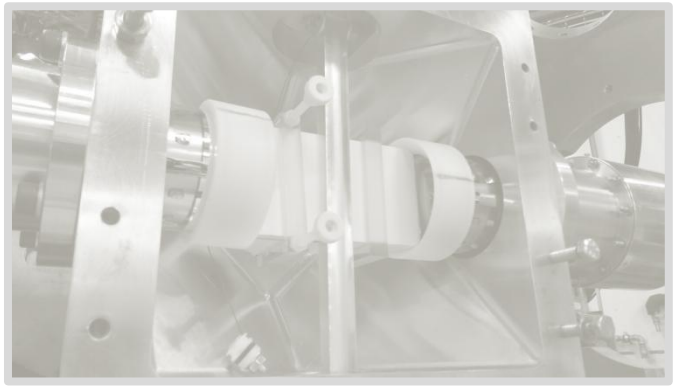
VANDLE Neutron Detector at IDS

Versatile Array for Neutron Detection at Low Energies

Experimental setup: Detectors 2015

High efficiency Beta-Gamma Spectroscopy





- Implantation on Tape
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- IS530: $^{34-35}$Mg, $^{34-36}$Al

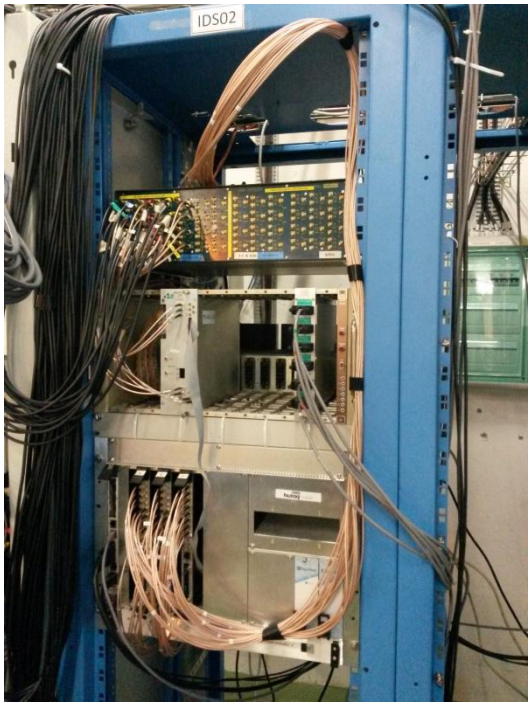
VANDLE Neutron Detector at IDS

Versatile Array for Neutron Detection at Low Energies (UTK, Knoxville, US)

- Implantation on Tape
- 2 or 4 HPGe Clovers
- 1 Central Plastic scintillator
- VANDLE Medium and Small bars
- IS599: $^{51-53}$K, IS600: $^{130-132}$Cd

Experimental setup: DAQ

- TDR - DAQ for IDS:
  - **TDR** – **T**otal **D**ata **R**eadout (Daresbury, UK), widely used at JYFL, chosen for **ISOLDE IDS - phase I**.
  - **3 x NUTAQ VHS-ADC** : 16 ch, 105 MSPS, 14-bit ADC (virtex4 FPGA)
  - Channels are **read out asynchronously** in singles mode and each data item is **time-stamped with an external clock** .
  - Capable to handle rates **~30kHz/ch**
  - Data recording framework : **MIDAS**



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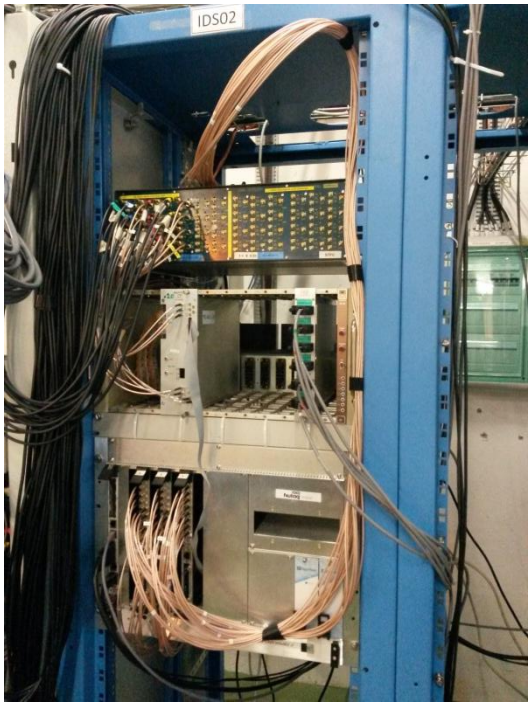
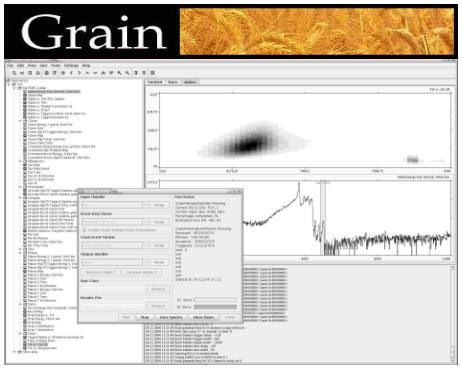
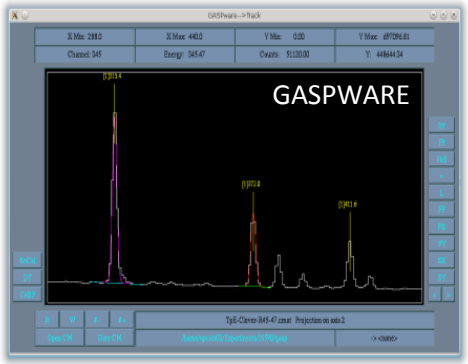


- GRAIN – data analysis software (ONLINE):
  - Developed at JYU written entirely in **Java**.
  - **A flexible and efficient event parser**

    https://trac.cc.jyu.fi/projects/grain

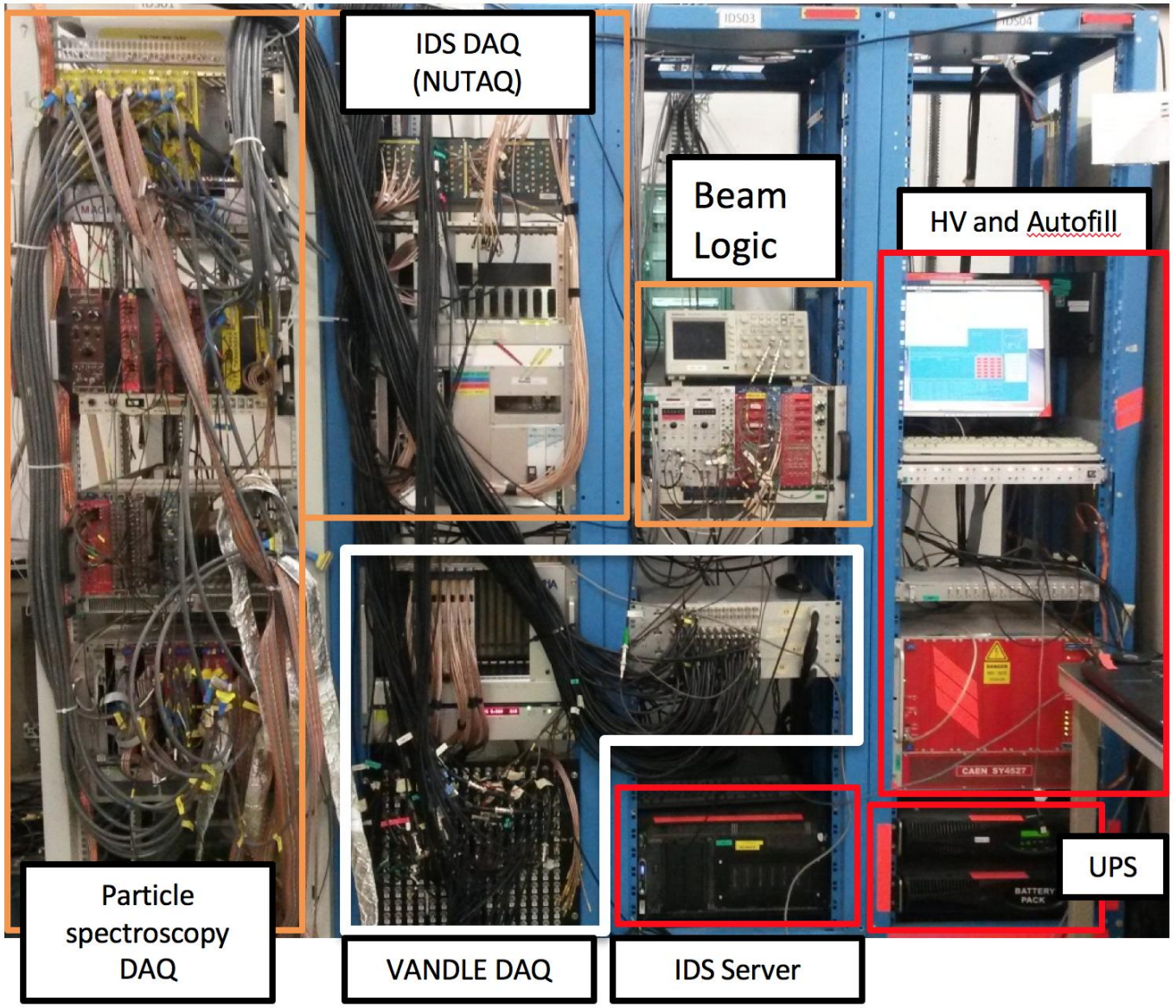




- N4ids - data analysis software (ONLINE/OFFLINE):
  - **Conversion code** developed at CERN written in **C++**
  - **Analysis** with **GASPWARE** or **ROOT**

P. Rahkila, NIM A 595, 637 (2008)

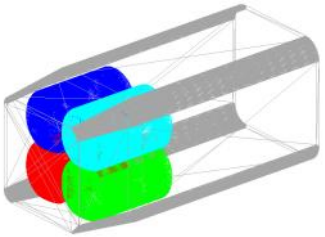
Experimental setup: DAQ

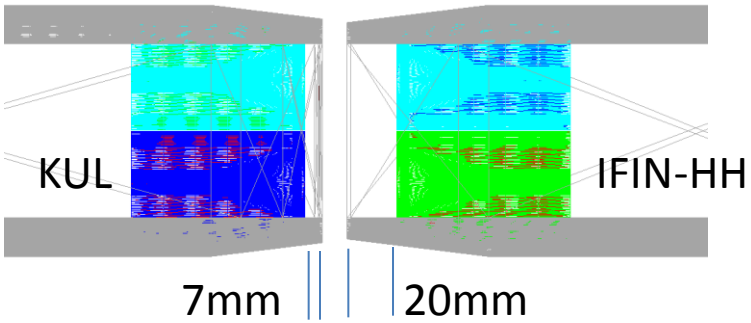


Experimental setup: The HPGe detectors of IDS

- Core part of IDS – 4 HPGe Clover detectors
- CANBERRA EUROBALL type (4 x 50 mm x 70 mm)
- 20% individual crystal relative efficiency*
  120% relative efficiency* using addback
  * relative to a 3”x3” NaI(Tl) crystal for 1332 keV photons of 60Co placed at 25 cm

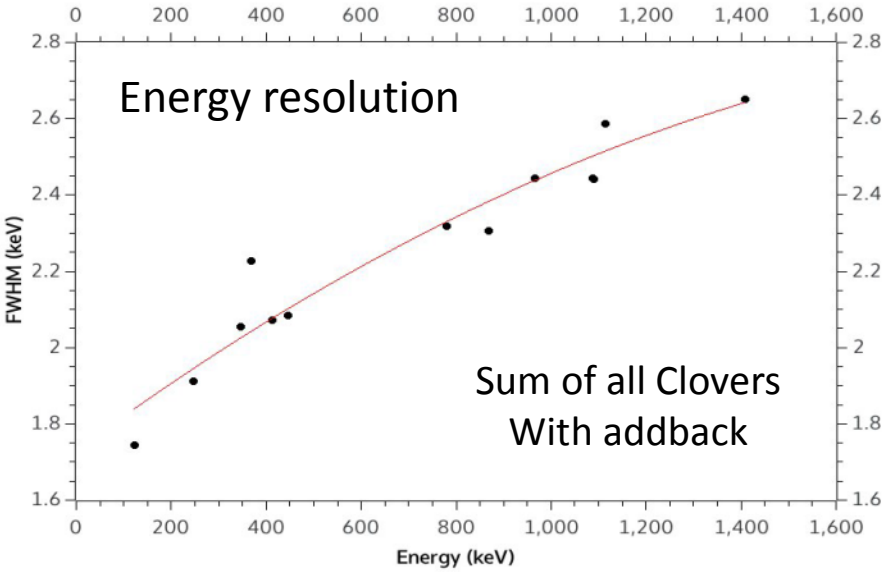
Contribution of:
- KU-Leuven: 2 Clovers with Carbon window
- IFIN-HH: 2 Clovers with normal Al window





Placement in the frame:

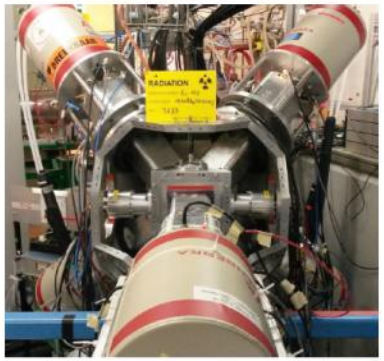
Distance (mm)	Theta (deg)	Phi (deg)	Spin (deg)
75	45	-35.26	15
75	-45	-35.26	-15
75	-45	35.26	15
75	45	35.26	-15

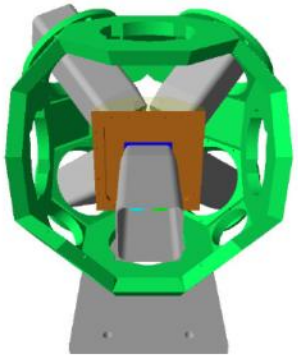


Experimental setup: Geant4 simulations

Detection setup

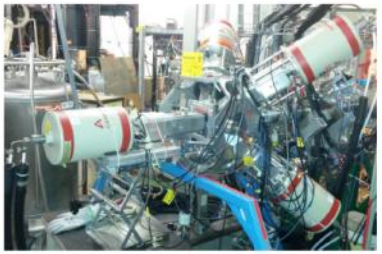
- 5 Clover detectors
- Plastic scintillator around the implantation point

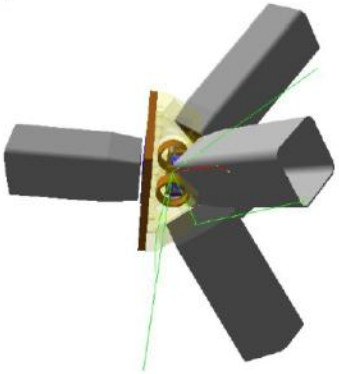


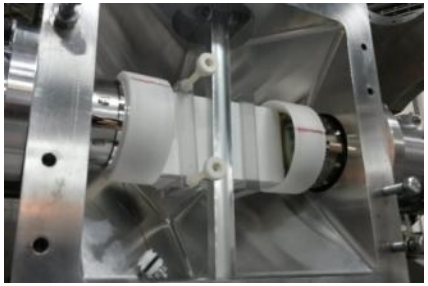


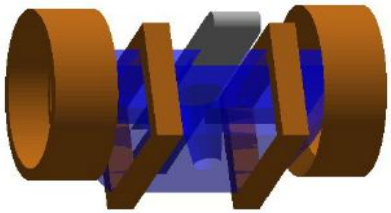
Absolute efficiency

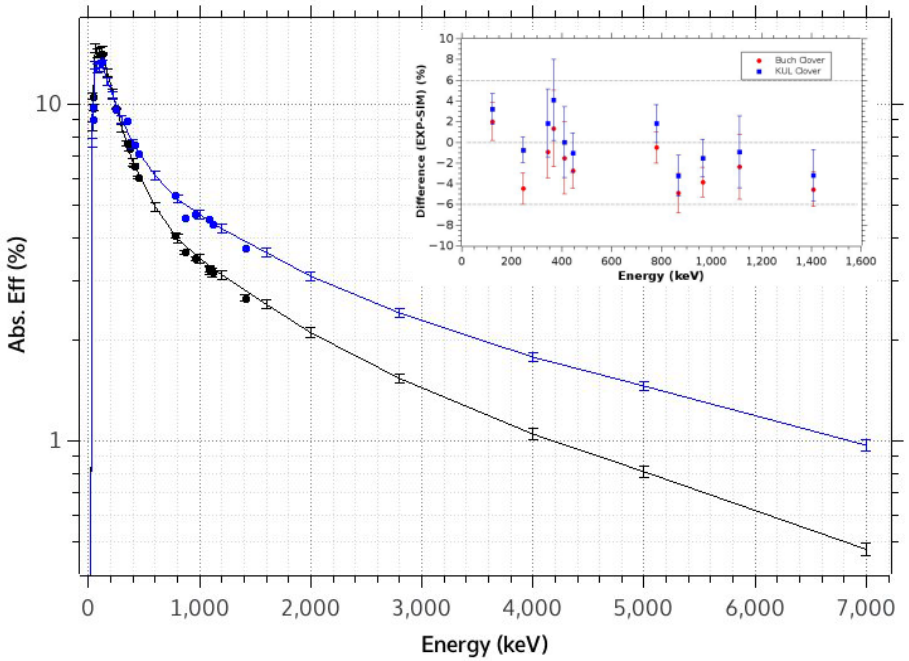
Using GEANT4 to extrapolate





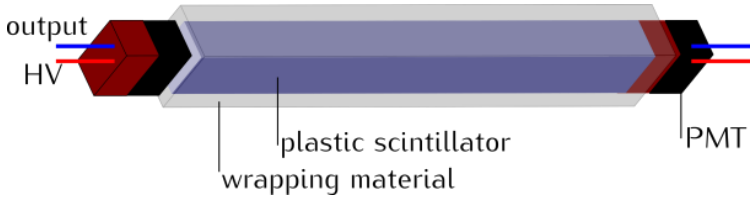




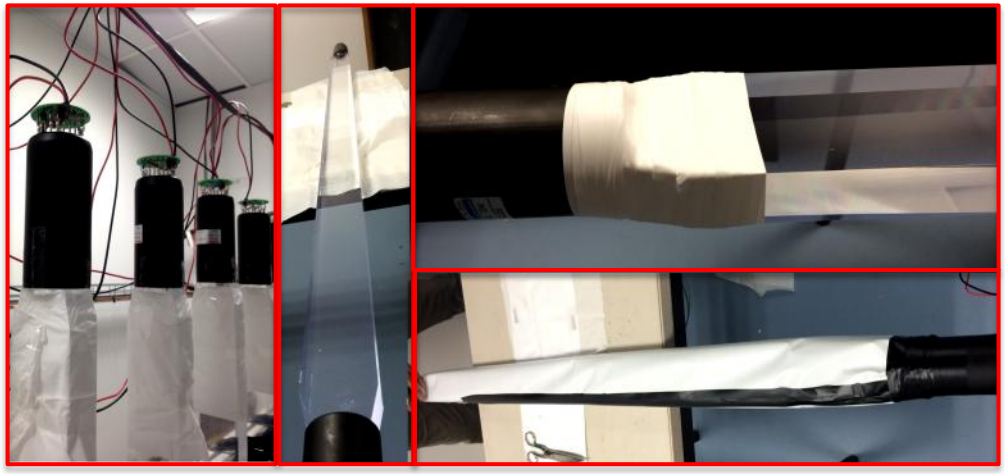


Experimental setup: The neutron detector of IDS

- TOF detector, inspired from the VANDLE design

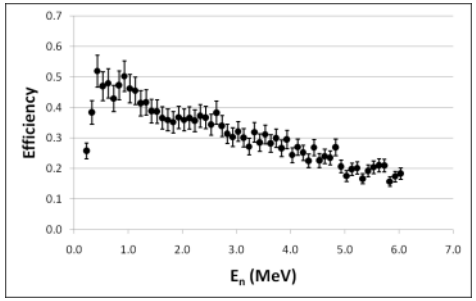


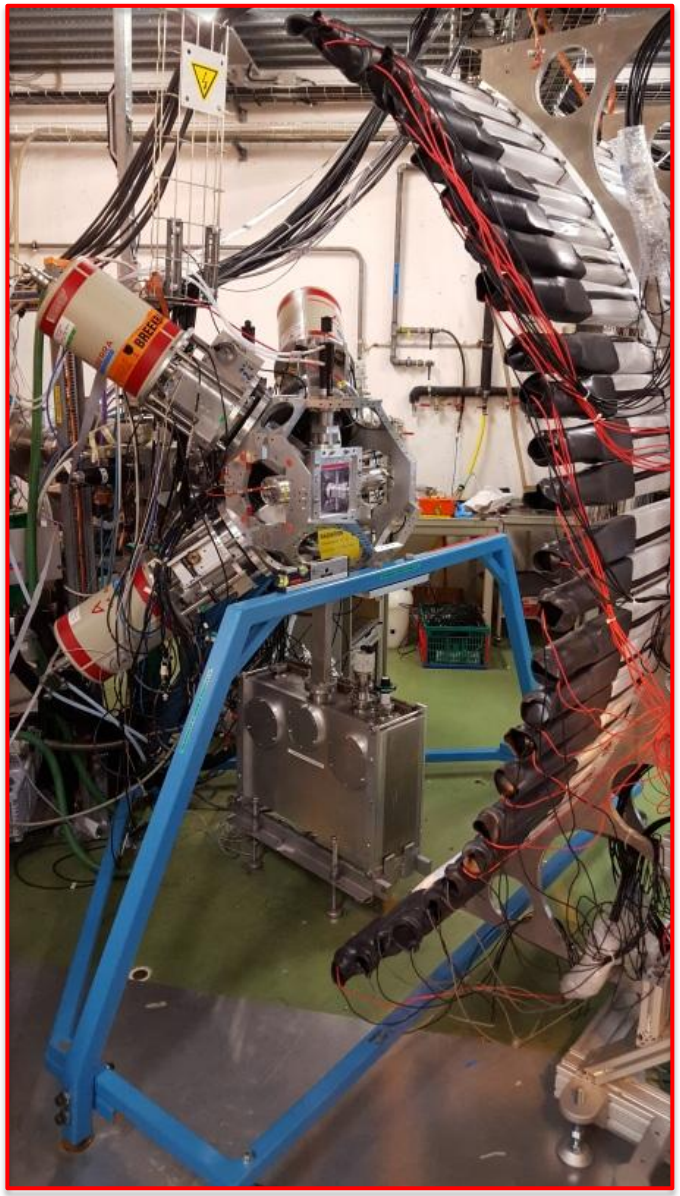
- Built in 2016 by the IDS local group



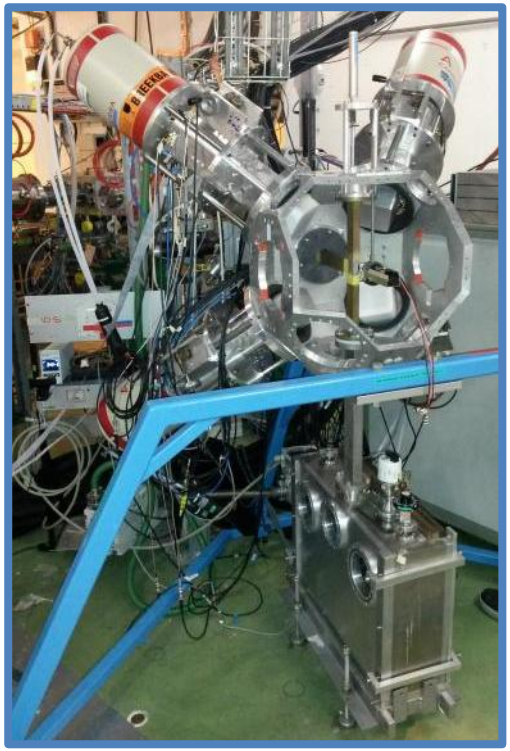
- 45% efficiency/bar @ 1MeV
- Ω = 21.7% of 4π
- 90% β-trigger efficiency

→ ≈ 9 % total efficiency at 1MeV





2016 Campaign at IDS

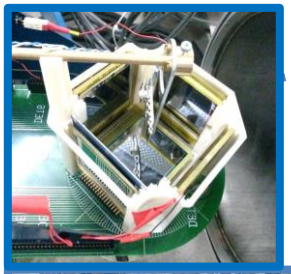


Exp	Shifts
IS605:	12 (May)
IS474:	9 (June)
IS610:	17 (June)
IS579:	9 (June)
IS609:	9 (July)
IS588:	15 (July)

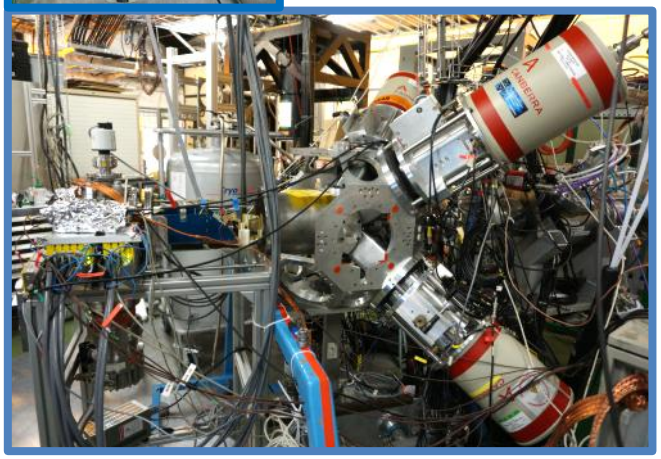
Total number of shifts
71 (1 shift = 8 hours)

Pending Experiments:
IS579 (due to target problems)

2016 Campaign at IDS



Particle Spectroscopy



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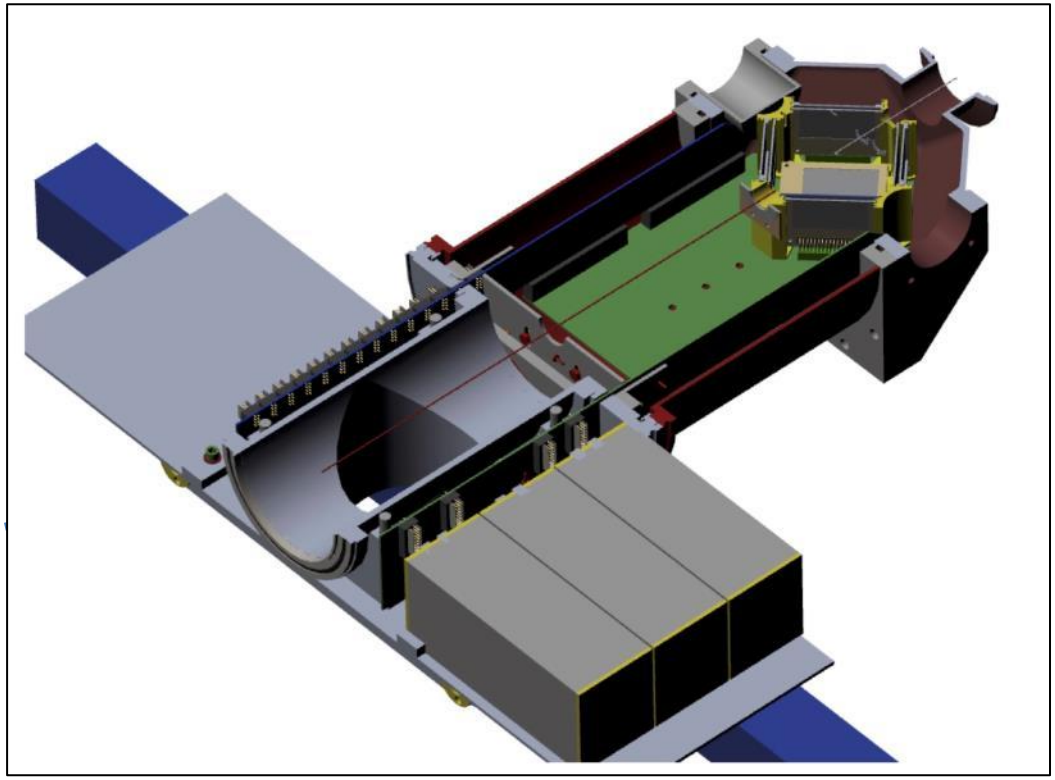
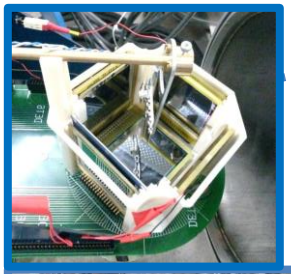
Pending Experiments:
IS579 (due to target problems)

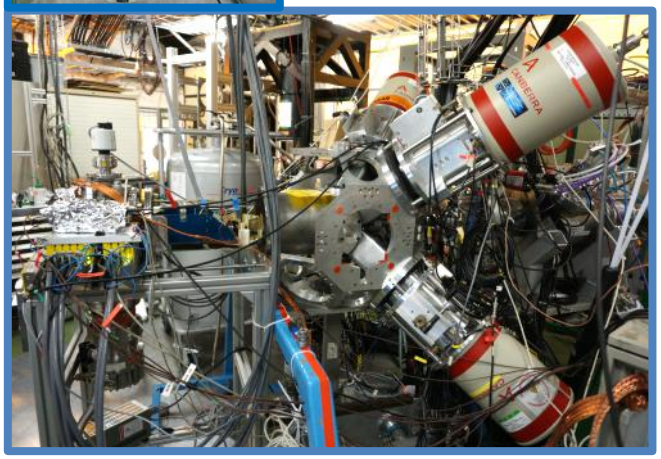
IS605: Absolute measurement of the βα decay of 16N, with significance for astrophysically important CO reaction.

2016 Campaign at IDS





Particle Spectroscopy



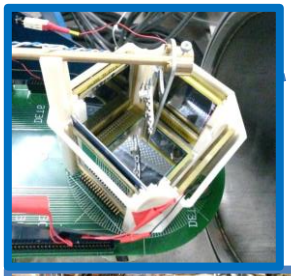
Exp	Shifts
IS605:	12 (May)
IS474:	9 (June)
IS610:	17 (June)
IS579:	9 (June)
IS609:	9 (July)
IS588:	15 (July)

Total number of shifts
71 (1 shift = 8 hours)

Pending Experiments:
IS579 (due to target problems)

IS605: Absolute measurement of the βα decay of 16N, with significance for astrophysically important CO reaction.

2016 Campaign at IDS



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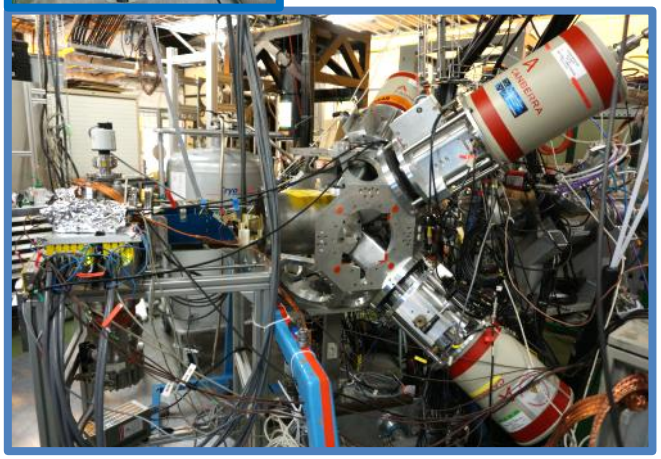

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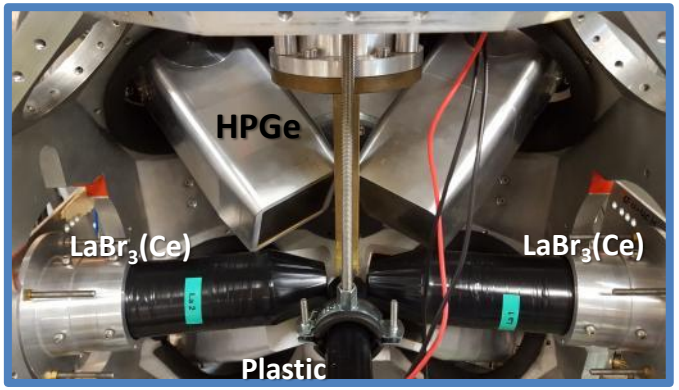
IS610: Gamma-ray and fast-timing spectroscopy of nuclei around the doubly-magic ^{132}Sn nucleus
IS474: Fast-timing studies of nuclei below ^{68}Ni populated in the β-decay of Mn isotopes
IS579: Study of octupole deformation in n-rich Ba isotopes

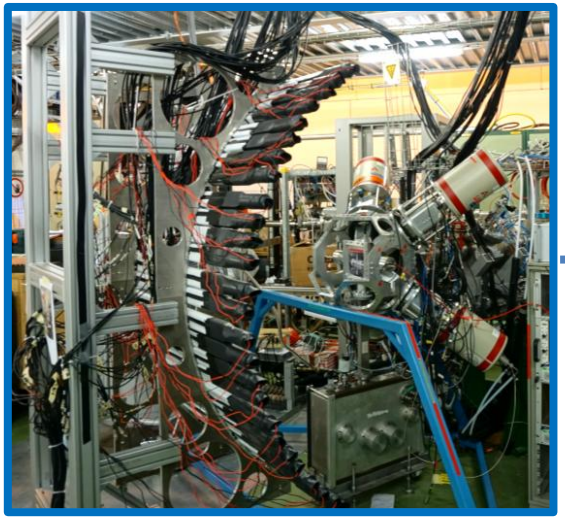
Fast-timing studies

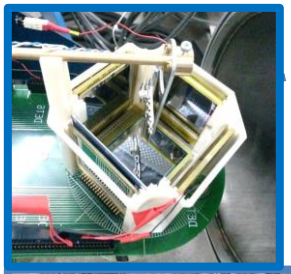


2016 Campaign at IDS

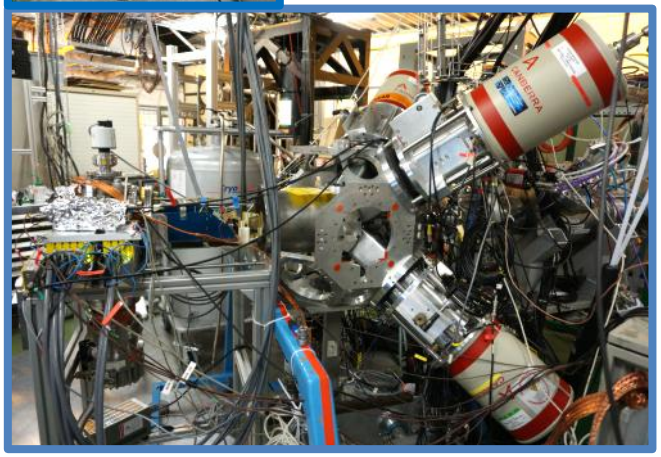
IS609: Study of beta-delayed neutron decay of 8He using the newly comissioned IDS Neutron Detector

Neutron Spectroscopy





Particle Spectroscopy



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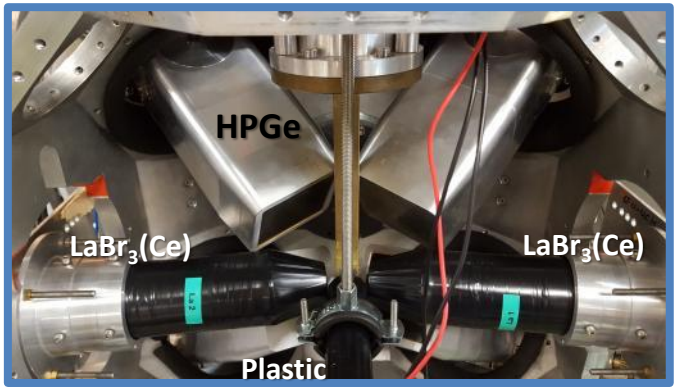
Fast-timing studies



2016 Campaign at IDS

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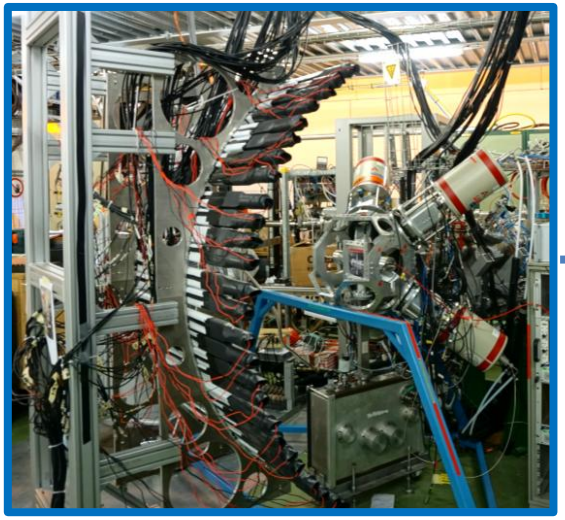
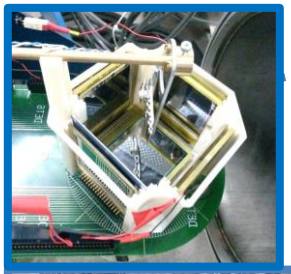
Neutron Spectroscopy





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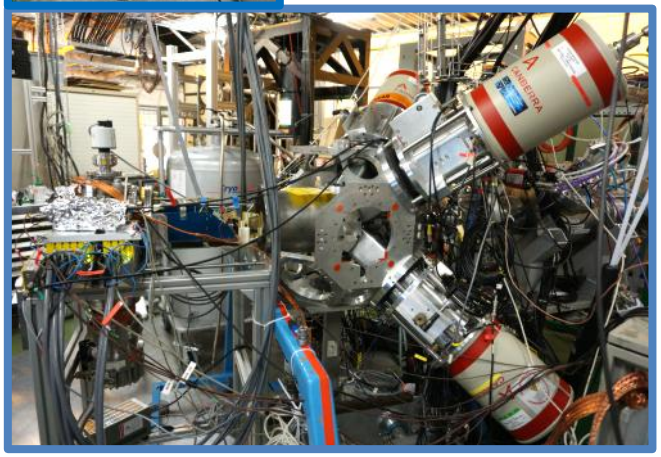
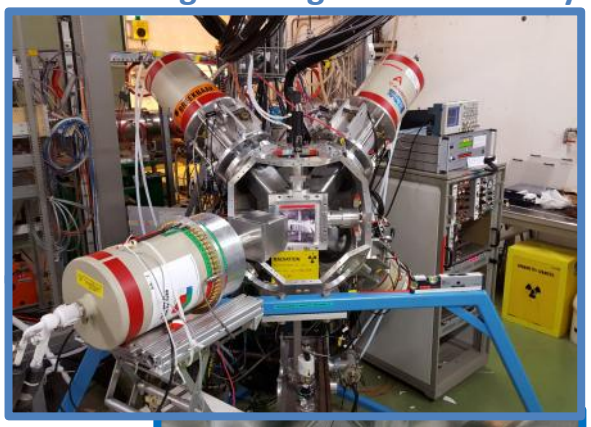
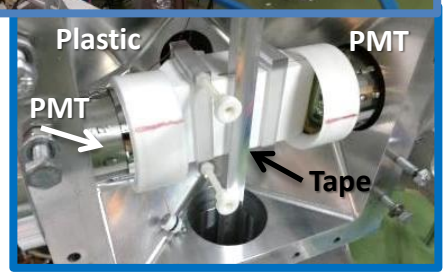


IS588: Study of core breaking and octupole low-spin states in ^{207}Tl through gamma and beta spectroscopy of ^{207,208}Hg

High beta-gamma efficiency





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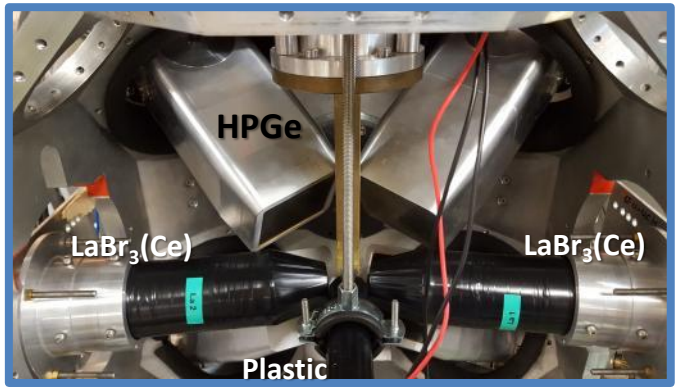

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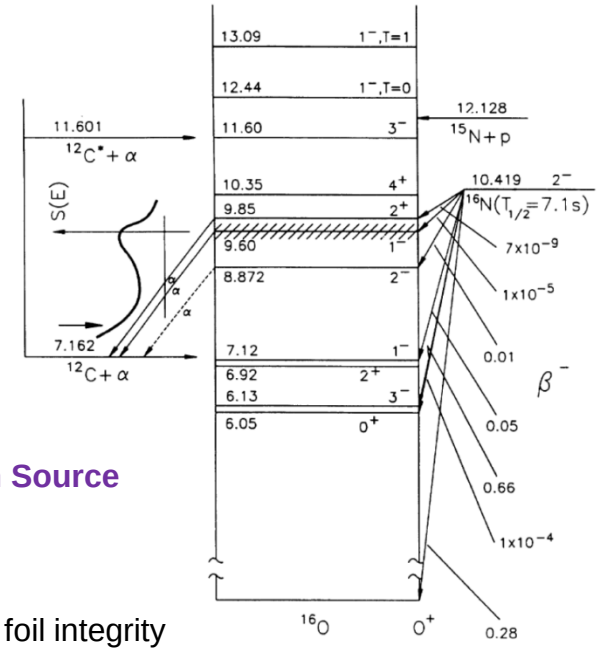
Total number of shifts
71 (1 shift = 8 hours)

Pending Experiments:
IS579 (due to target problems)

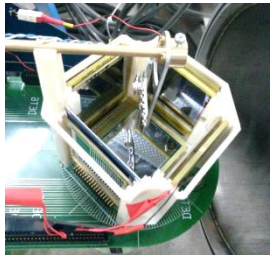
IS605: Absolute measurement of the βα decay of 16N, with significance for astrophysically important CO reaction.

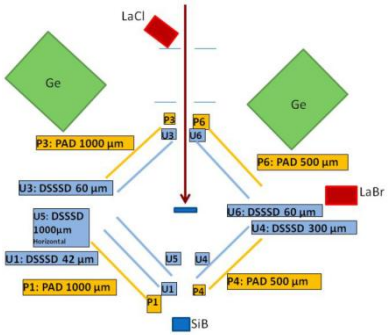
IS605: Absolute measurement of the βα decay of ^{16}N

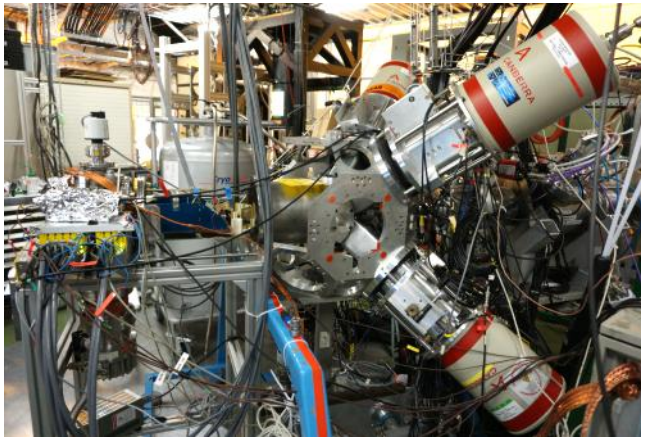
- **Spokesperson:** O. S. Kirsebom (Aarhus University)
- **Physics:**
  - β-decay of **^{16}N** to determine the absolute βα branching ratio (σ < 5%)
  - There are indications that the previously measured value (1.20(5)e-5) is in error by an amount significantly larger than the uncertainty
  - This limits the precision with which the S-factor of the astrophysically important ^{12}C(α,γ)^{16}O reaction can be determined.



IDS Particle Spectroscopy

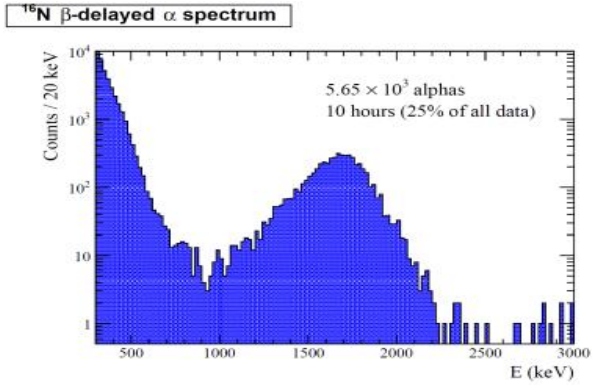






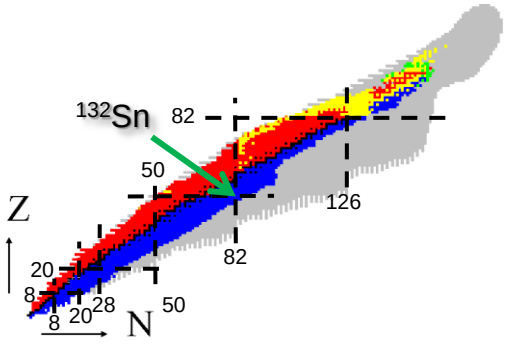
- **Set-up and Methodology:**
  - **CaO Target + cooled plasma Ion Source**
  - 4 HPGe Clover detectors
  - 1 LaBr + 1 LaCl as monitors
  - DSSD + Si Pad detectors
  - SiSB at the beamdump to monitor foil integrity
  - The beam was carefully monitored to control the amount implanted in the collimator
  - The digital DAQ (NUTAQ) was used in parallel with the analog MBS

- **Preliminary Results:**
  - Yield of ^{16}N ~ 2-9 E4 ions/µC
  - **Analysis is on-going.**

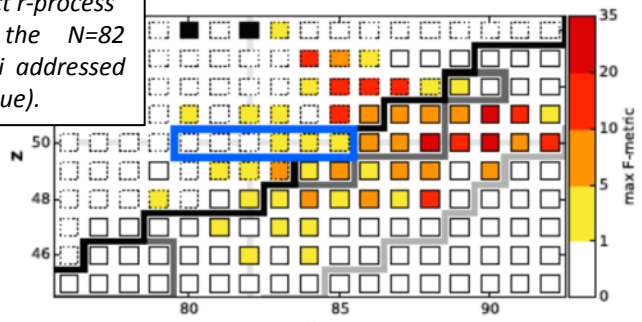


IS610: Gamma and fast-timing spectroscopy of the doubly magic ^{132}Sn and its one- and two-neutron particle/hole neighbours

- **Spokesperson:** L. M. Fraile (UCM, Madrid), A. Korgul (FUW, Warsaw)
- **Physics:**
  - β-decay of **$^{130\text{-}134}$In** to perform fast-timing studies in Sn isotopes
  - Increasing interest in these nuclei since they serve to **test nuclear models using state-of-the-art interactions and many body approaches**, and they provide information relevant to deduce single particle states.
  - Properties of these nuclei are very important to model the **astrophysical r-process.**

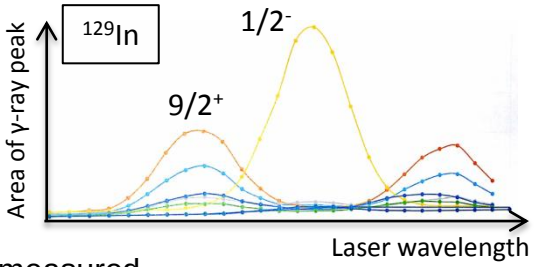


Nuclei whose properties significantly impact r-process abundances in the N=82 region, and nuclei addressed in this proposal (blue).



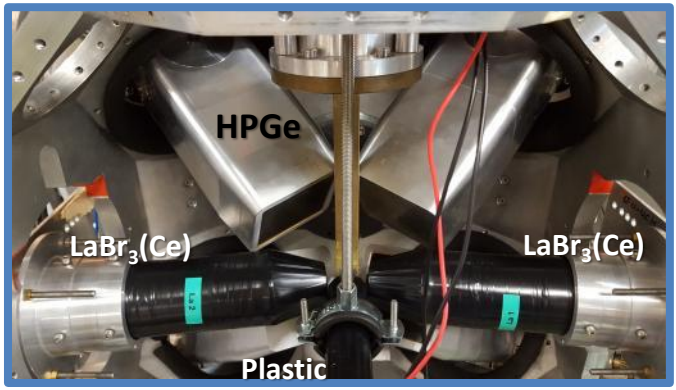
M.R. Mumpower et al., PRC 92 035807 (2015)

- **Set-up and Methodology:**
  - **Target: UCx (standard)**
  - 4 HPGe Clover detectors
    + 2 LaBr3(Ce) (1.5”x1.5”)
    + 1 plastic scintillator
    + Tape Station



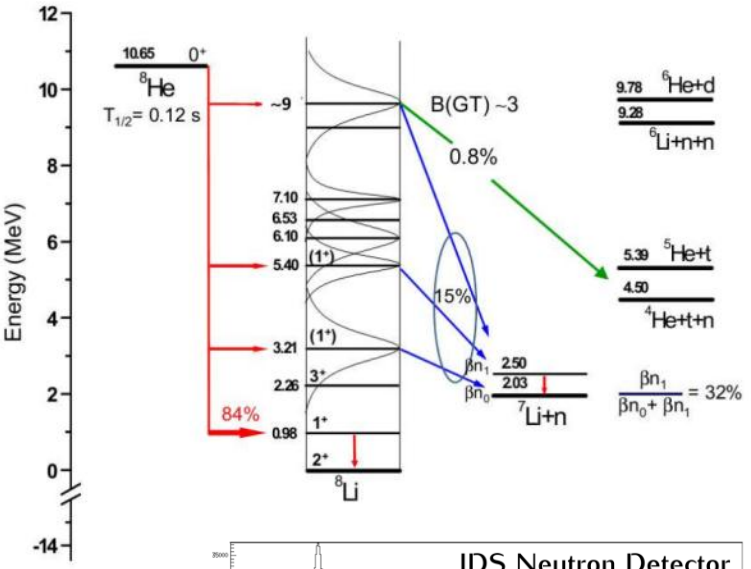
- **Preliminary Results:**
  - All isotopes were successfully measured.
  - Analysis is on-going
  - Yield of ^{133}In ~ 800 ions/μC, high Pn value (~ 85%)
  - **RILIS was used to scan and isolate different isomers**
  - **Motivation for a new proposal at IDS for neutron spectroscopy of 133Sn**

Life Time Measurements

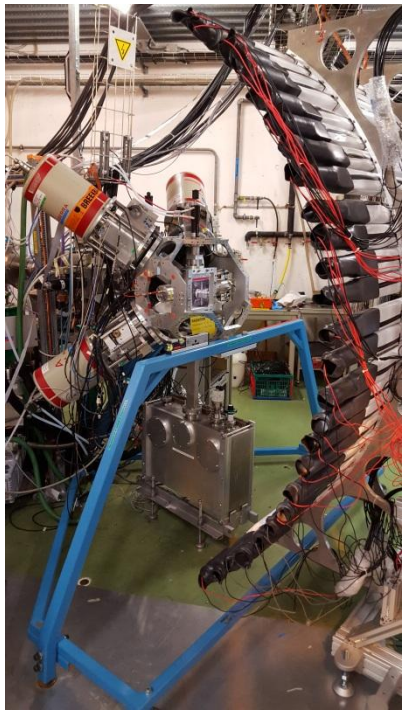


IS609: Study of β-delayed neutron decay of ^{8}He

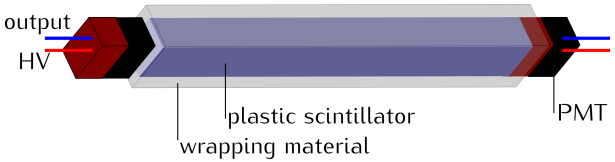
- **Spokesperson:** Z. Janas (FUW), R. Grzywacz (UTK), K. Riisager (AU)
- **Physics:**
  - βn-decay of **^{8}He** to populate states in ^{7}Li
  - Using coincident gamma ray measurement, components of the spectrum corresponding to transitions to the ground- and first excited state of ^{7}Li will be disentangled.
  - Clarify the discrepancy between the B(GT) distributions derived from
  - the β-decay and ^{8}He(p,n)^{8}Li reaction studies.



IDS Neutron Detector

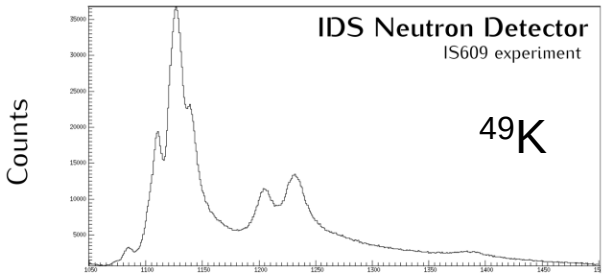


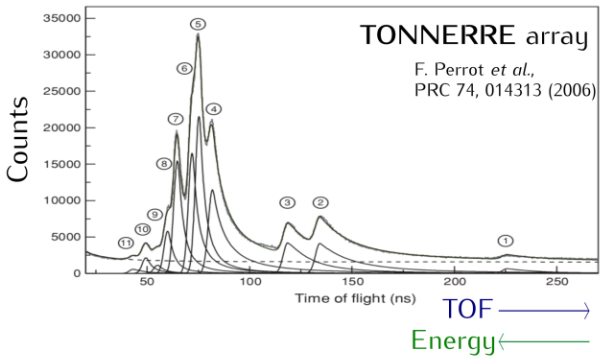
- **Set-up and Methodology:**
  - **Target: UCx (standard)**
  - 4 HPGe Clover detectors
  - 90% plastic scintillator
  - Newly comissioned IDSND, build locally



- **Preliminary Results:**

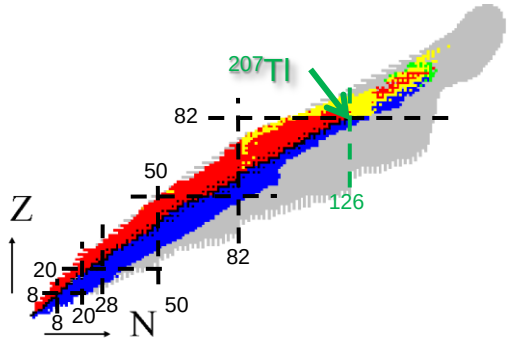
^{49}K was used as a calibration source.
The TOF resolution is comparable to TONNERRE
Analysis is on-going.



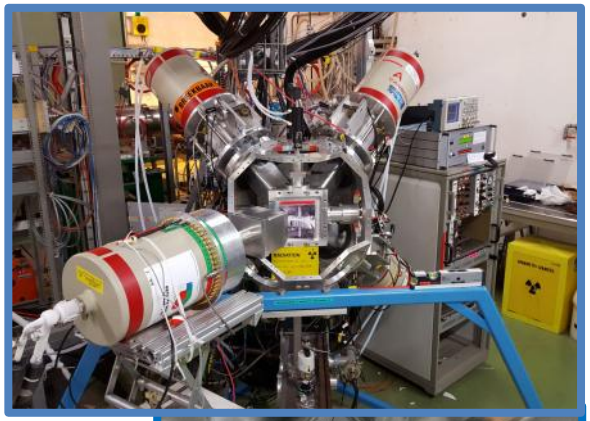


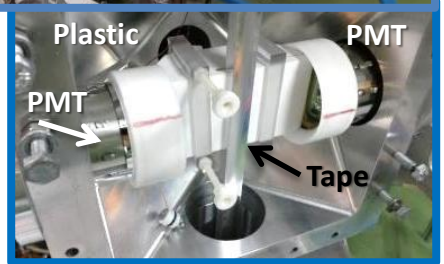
IS588: Core breaking and octupole low-spin states in ^{207}Tl

- **Spokesperson:** Z. Podolyák (Univ. Surrey)
- **Physics:**
  - **Low-spin level structure** of the ^{207}Tl by β-decay of ^{207}Hg
  - Breaking of the neutron or proton core
  - Collective octupole phonon coupled to the single proton hole
  - Determining spins and parities using angular correlations.
- **Set-up and Methodology:**
  - Molten Pb target
  - 4 HPGe Clover detectors (IDS) + 1 TIGRESS Clover (IFIN-HH) + 90% plastic scintillator

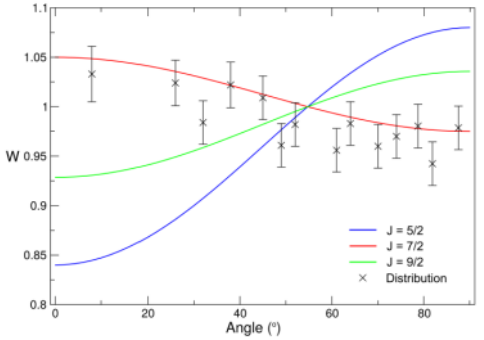


High beta-gamma efficiency



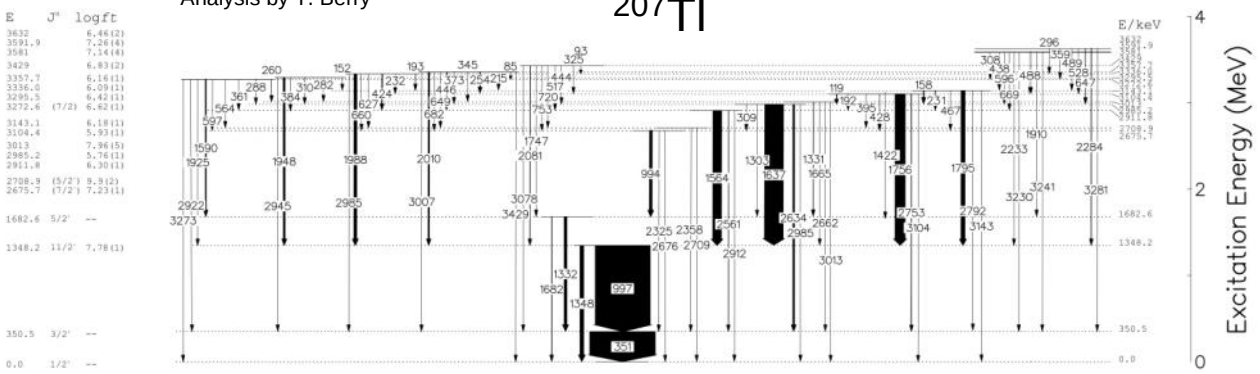


- **Preliminary Results:**
  - **New transitions** observed , significantly improving the previously known level scheme of ^{207}Tl
  - Angular correlations pinpoint spins and parities



Analysis by T. Berry

^{207}Tl



Publications from IDS

Publications from IDS

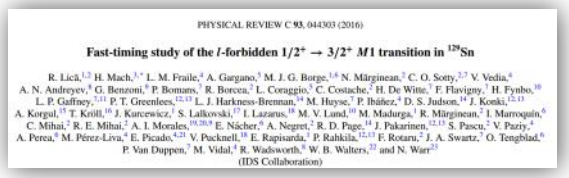
PHYSICAL REVIEW C **93**, 044303 (2016)

Fast-timing study of the *l*-forbidden $1/2^+ \rightarrow 3/2^+$ *M*1 transition in ^{129}Sn

R. Lică,[1,2] H. Mach,[3,*] L. M. Fraile,[4] A. Gargano,[5] M. J. G. Borge,[1,6] N. Mărginean,[2] C. O. Sotty,[2,7] V. Vedia,[4] A. N. Andreyev,[8] G. Benzoni,[9] P. Bomans,[7] R. Borcea,[2] L. Coraggio,[5] C. Costache,[2] H. De Witte,[7] F. Flavigny,[7] H. Fynbo,[10] L. P. Gaffney,[7,11] P. T. Greenlees,[12,13] L. J. Harkness-Brennan,[14] M. Huyse,[7] P. Ibáñez,[4] D. S. Judson,[14] J. Konki,[12,13] A. Korgul,[15] T. Kröll,[16] J. Kurcewicz,[1] S. Lalkovski,[17] I. Lazarus,[18] M. V. Lund,[10] M. Madurga,[1] R. Mărginean,[2] I. Marroquín,[6] C. Mihai,[2] R. E. Mihai,[2] A. I. Morales,[19,20,9] E. Nácher,[6] A. Negret,[2] R. D. Page,[14] J. Pakarinen,[12,13] S. Pascu,[2] V. Paziy,[4] A. Perea,[6] M. Pérez-Liva,[4] E. Picado,[4,21] V. Pucknell,[18] E. Rapisarda,[1] P. Rahkila,[12,13] F. Rotaru,[2] J. A. Swartz,[7] O. Tengblad,[6] P. Van Duppen,[7] M. Vidal,[4] R. Wadsworth,[8] W. B. Walters,[22] and N. Warr[23]
(IDS Collaboration)

- The experiment took place in September 2014
- A state in ^{129}Sn was predicted to have a $T_{1/2}$ ~ 4 ns and was accessible to study at IDS via the β decay of ^{129}In.
- The $3s_{1/2} \rightarrow 2d_{3/2}$ M1 forbidden transition represents a good test case for M1 effective operators near shell closures.
- After calibrations and time-walk corrections, the half-life value was extracted using the centroid shift technique, $T_{1/2}$ = 19(10) ps.
- Shell model calculations could account for the discrepancy by using an effective M1 operator.

Publications from IDS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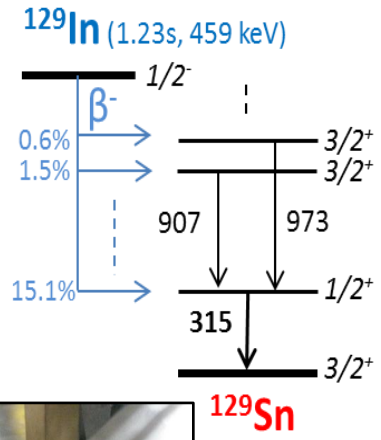
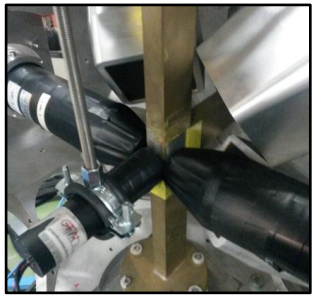
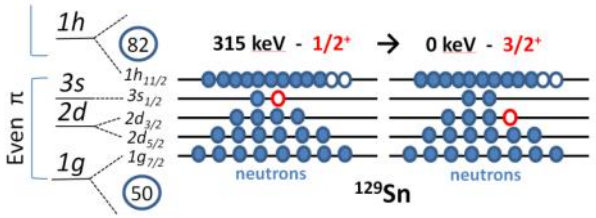
(IDS Collaboration)







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M1 l-forbidden

$T_{1/2}^{theor.} \sim 4ns$

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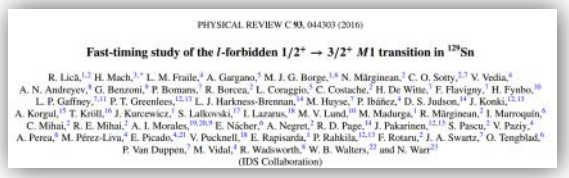
- Shell model calculations could account for the discrepancy by using an effective M1 operator

Publications from IDS


PHYSICAL REVIEW C 93, 044303 (2016)

Fast-timing study of the *l*-forbidden $1/2^+ \rightarrow 3/2^+$ *M*1 transition in ^{129}Sn

R. Lică, H. Mach, L. M. Fraile, A. Gargano, M. J. G. Borge, N. Mărginean, C. O. Sotty, V. Vedia, A. N. Andreyev, G. Benzoni, P. Bomans, R. Borcea, L. Coraggio, C. Costache, H. De Witte, F. Flavigny, H. Fynbo, L. P. Gaffney, P. T. Greenlees, L. J. Harkness-Brennan, M. Huyse, P. Ibáñez, D. S. Judson, J. Konki, A. Korgul, T. Kröll, J. Kurcewicz, S. Lalkovski, I. Lazarus, M. V. Lund, M. Madurga, R. Mărginean, I. Marroquin, C. Mihai, R. E. Mihai, A. I. Morales, E. Nácher, A. Negret, R. D. Page, J. Pakarinen, S. Pascu, V. Paziy, A. Perea, M. Pérez-Liva, E. Picado, V. Pucknell, E. Rapisarda, P. Rahkila, F. Rotaru, J. A. Swartz, O. Tengblad, P. Van Duppen, M. Vidal, R. Wadsworth, W. B. Walters and N. Warr
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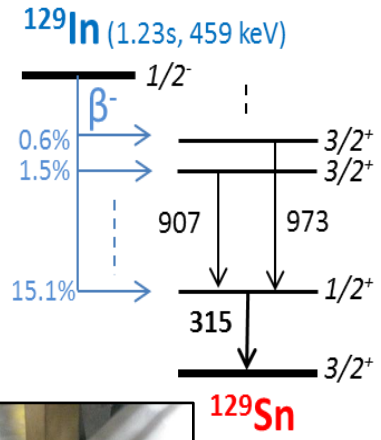

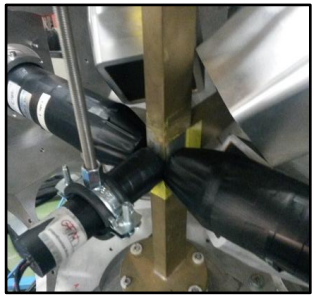

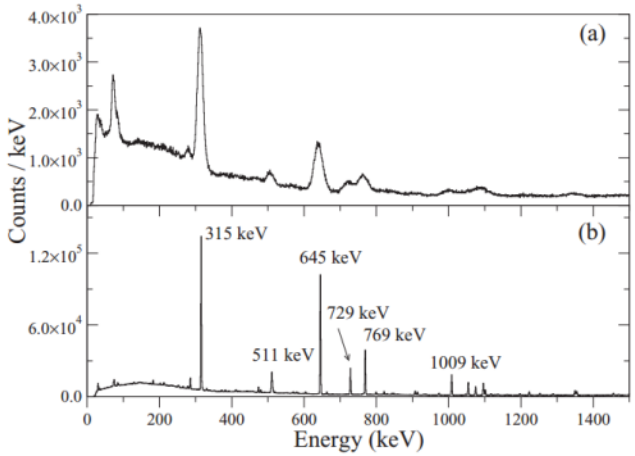

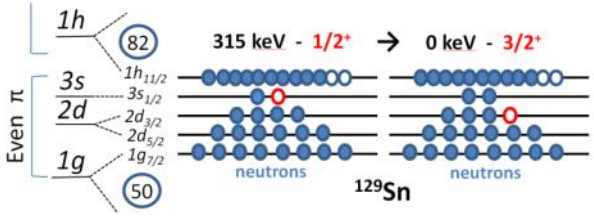

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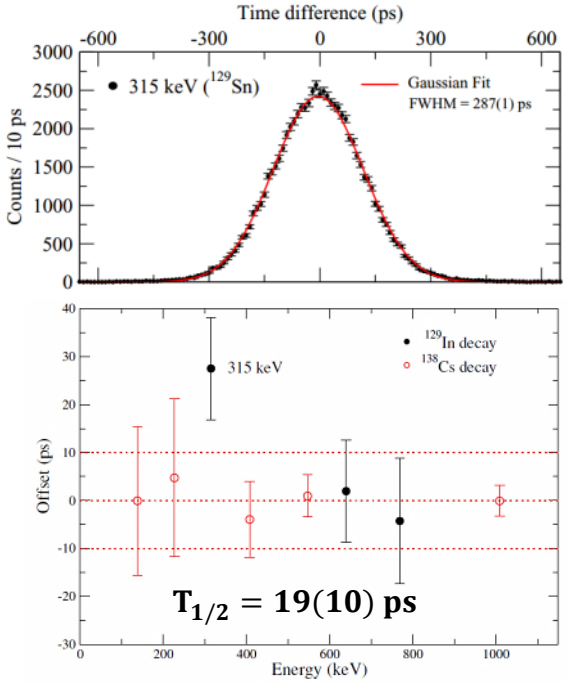

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Publications from IDS

Eur. Phys. J. A (2016) **52**: 304
DOI 10.1140/epja/i2016-16304-x

THE EUROPEAN PHYSICAL JOURNAL A

Regular Article – Experimental Physics

Beta-delayed proton emission from ^{20}Mg

IDS Collaboration

M.V. Lund[1,a], A. Andreyev[2], M.J.G. Borge[3,4], J. Cederkäll[5], H. De Witte[6], L.M. Fraile[7], H.O.U. Fynbo[1], P.T. Greenlees[8,9], L.J. Harkness-Brennan[10], A.M. Howard[1], M. Huyse[6], B. Jonson[11], D.S. Judson[10], O.S. Kirsebom[1], J. Konki[8,9], J. Kurcewicz[4], I. Lazarus[12], R. Lica[4,13], S. Lindberg[11], M. Madurga[4], N. Marginean[13], R. Marginean[13], I. Marroquin[3], C. Mihai[13], M. Munch[1], E. Nacher[3], A. Negret[13], T. Nilsson[11], R.D. Page[10], S. Pascu[13], A. Perea[3], V. Pucknell[12], P. Rahkila[8,9], E. Rapisarda[4], K. Riisager[1], F. Rotaru[13], C. Sotty[6,13], M. Stanoiu[13], O. Tengblad[3], A. Turturica[13], P. Van Duppen[6], V. Vedia[7], R. Wadsworth[2], and N. Warr[14]

- The experiment took place in March 2015
- A total of 27 delayed proton branches were measured including 7 so far unobserved
- An updated decay scheme, including three new resonances above the proton separation energy in ^{20}Na and more precise resonance energies.
- Beta-decay feeding to two resonances above the Isobaric Analogue State in ^{20}Na is observed. Important for the astrophysically relevant reaction ^{15}O(α, γ)^{19}Ne(p, γ) ^{20}Na in the Hot CNO cycle.

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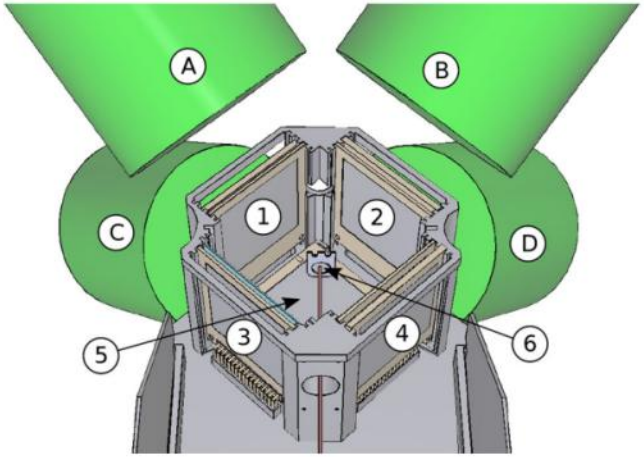
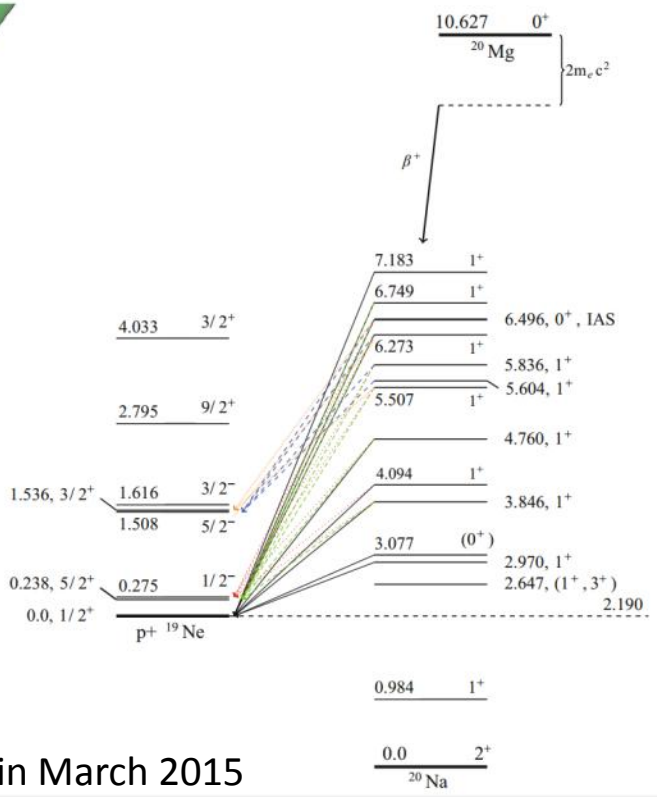
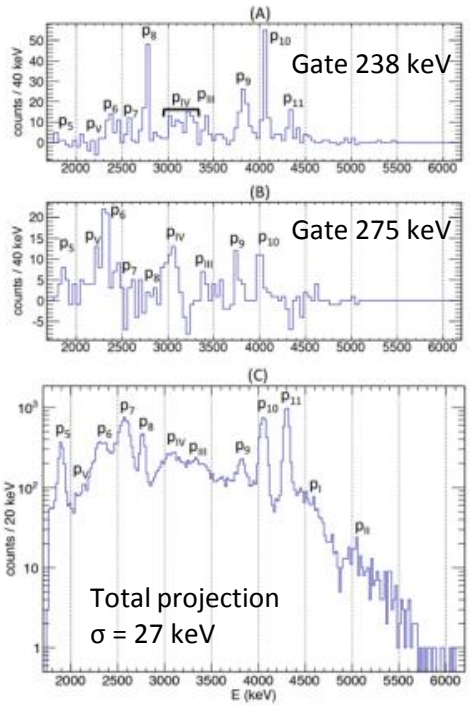


Detection setup:

- Implantation on C foil
- 4 Ge Clovers at Forward angles
- Si box(5 DSSD's, 3 Pad's, 1 SSD)





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Outlook

- Experiments:
  - Pending (9 shifts):
    - IS579 – Study of octupole deformation in n-rich Ba isotopes
  - Accepted:
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    - CERN-INTC-2016-034 ; INTC-P-471 - Cu decay into neutron-rich Zn isotopes: shell structure near ^{78}Ni
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  - Building a dedicated support for adding extra HPGe detectors for angular correlation studies
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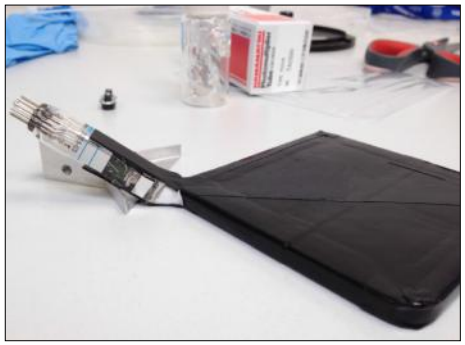
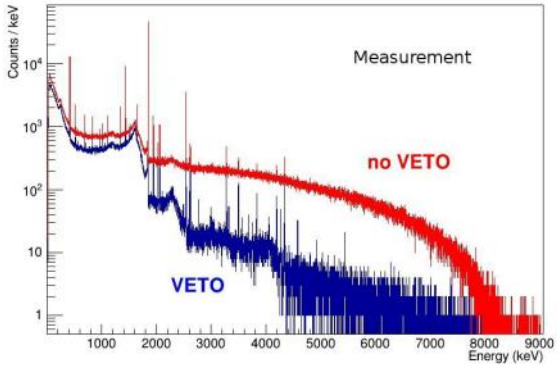
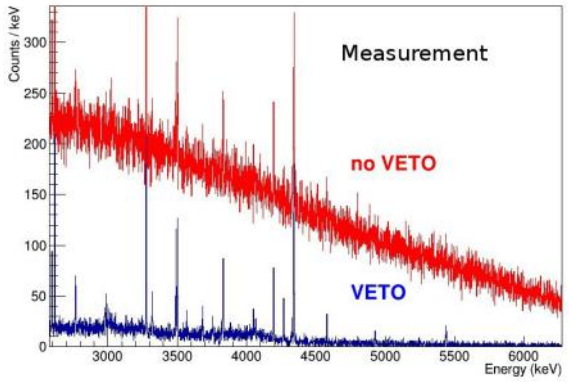






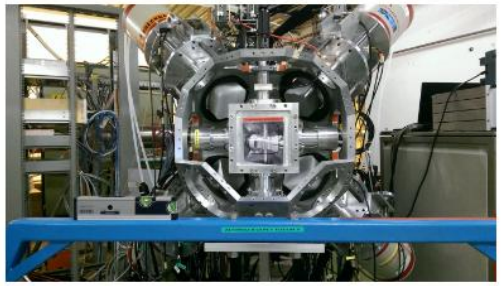
Visit our new website

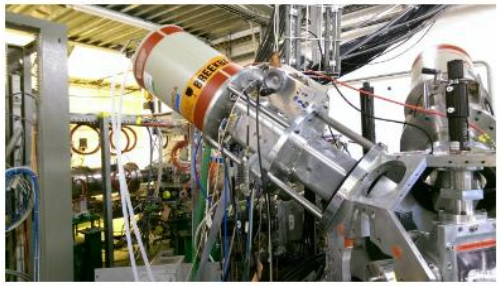
http://isolde-ids.web.cern.ch/

ISOLDE Decay Station (IDS)

IDS at ISOLDE | Detection set-up | The IDS collaboration | Experiments | Links

IDS is a permanent detector set-up at the ISOLDE facility at CERN, dedicated to decay spectroscopy for research into nuclear structure, nuclear engineering and astrophysics.





The versatile design of IDS allows for the installation of different types of detector around the implantation point, alongside its own four HPGe clovers. It can hence be used for many specialised decay measurements, including fast timing, neutron time-of-flight, and beta, proton and alpha particle emission.

The Decay Station is an ideal tool for studying the decay properties of radioactive nuclei across the Segré chart; light to heavy, proton-rich to neutron-rich. The nucleus of interest is only limited by the production capabilities of the targets at ISOLDE.

Visit our new website

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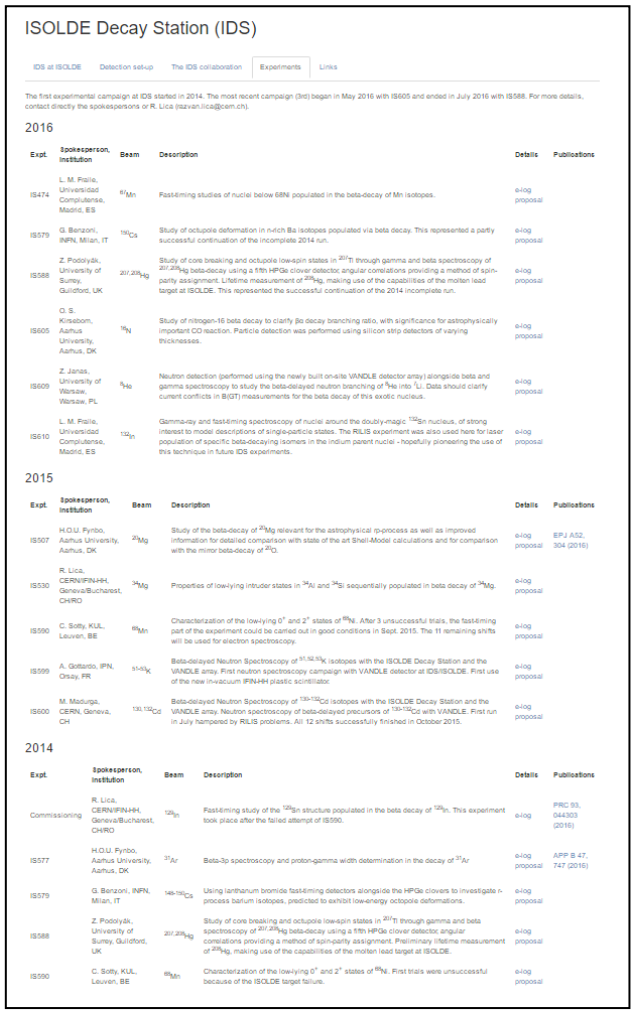

ISOLDE Decay Station (IDS)

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The first experimental campaign at IDS started in 2014. The most recent campaign (3rd) began in May 2016 with IS605 and ended in July 2016 with IS588. For more details, contact directly the spokespersons or R. Lica (razvan.lica@cern.ch).

2016

Expt.	Spokesperson, Institution	Beam	Description	Details	Publications
IS474	L. M. Fraile, Universidad Complutense, Madrid, ES	^{67}Mn	Fast-timing studies of nuclei below 68Ni populated in the beta-decay of Mn isotopes.	e-log proposal	
IS579	G. Benzoni, INFN, Milan, IT	^{139}Cs	Study of octupole deformation in n-rich Ba isotopes populated via beta decay. This represented a partly successful continuation of the incomplete 2014 run.	e-log proposal	
IS588	Z. Podolyák, University of Surrey, Guildford, UK	^{207,209}Hg	Study of core breaking and octupole low-spin states in ^{207}Tl through gamma and beta spectroscopy of ^{207,209}Hg beta-decay using a fifth HPGe clover detector, angular correlations providing a method of spin-parity assignment. Lifetime measurement of ^{209}Hg, making use of the capabilities of the molten lead target at ISOLDE. This represented the successful continuation of the 2014 incomplete run.	e-log proposal	
IS605	O. S. Kirsebom, Aarhus University, Aarhus, DK	^{16}N	Study of nitrogen-16 beta decay to clarify βα decay branching ratio, with significance for astrophysically important CO reaction. Particle detection was performed using silicon strip detectors of varying thicknesses.	e-log proposal	
IS609	Z. Janas, University of Warsaw, Warsaw, PL	^{9}He	Neutron detection (performed using the newly built on-site VANDLE detector array) alongside beta and gamma spectroscopy to study the beta-delayed neutron branching of ^{9}He into ^{8}Li. Data should clarify current conflicts in B(GT) measurements for the beta decay of this exotic nucleus.	e-log proposal	
IS610	L. M. Fraile, Universidad Complutense, Madrid, ES	^{132}In	Gamma-ray and fast-timing spectroscopy of nuclei around the doubly-magic ^{132}Sn nucleus, of strong interest to model descriptions of single-particle states. The RILIS experiment was also used here for laser population of specific beta-decaying isomers in the indium parent nuclei - hopefully pioneering the use of this technique in future IDS experiments.	e-log proposal	

2015

Expt.	Spokesperson, Institution	Beam	Description	Details	Publications
IS507	H.O.U. Fynbo, Aarhus University, Aarhus, DK	^{20}Mg	Study of the beta-decay of ^{20}Mg relevant for the astrophysical rp-process as well as improved information for detailed comparison with state of the art Shell-Model calculations and for comparison with the mirror beta-decay of ^{20}O.	e-log proposal	EPJ A52, 304 (2016)
IS530	R. Lica, CERN/IFIN-HH, Geneva/Bucharest, CH/RO	^{34}Mg	Properties of low-lying intruder states in ^{34}Al and ^{34}Si sequentially populated in beta decay of ^{34}Mg.	e-log proposal	
IS590	C. Sotty, KUL, Leuven, BE	^{69}Mn	Characterization of the low-lying 0$^+$ and 2$^+$ states of ^{68}Ni. After 3 unsuccessful trials, the fast-timing part of the experiment could be carried out in good conditions in Sept. 2015. The 11 remaining shifts will be used for electron spectroscopy.	e-log proposal	
IS599	A. Gottardo, IPN, Orsay, FR	$^{51-53}$K	Beta-delayed Neutron Spectroscopy of ^{51,52,53}K isotopes with the ISOLDE Decay Station and the VANDLE array. First neutron spectroscopy campaign with VANDLE detector at IDS/ISOLDE. First use of the new in-vacuum IFIN-HH plastic scintillator.	e-log proposal	
IS600	M. Madurga, CERN, Geneva, CH	^{130,132}Cd	Beta-delayed Neutron Spectroscopy of $^{130-132}$Cd isotopes with the ISOLDE Decay Station and the VANDLE array. Neutron spectroscopy of beta-delayed precursors of $^{130-132}$Cd with VANDLE. First run in July hampered by RILIS problems. All 12 shifts successfully finished in October 2015.	e-log proposal	

2014

Expt.	Spokesperson, Institution	Beam	Description	Details	Publications
Commissioning	R. Lica, CERN/IFIN-HH, Geneva/Bucharest, CH/RO	^{129}In	Fast-timing study of the ^{129}Sn structure populated in the beta decay of ^{129}In. This experiment took place after the failed attempt of IS590.	e-log	PRC 93, 044303 (2016)
IS577	H.O.U. Fynbo, Aarhus University, Aarhus, DK	^{37}Ar	Beta-3p spectroscopy and proton-gamma width determination in the decay of ^{37}Ar	e-log proposal	APP B 47, 747 (2016)
IS579	G. Benzoni, INFN, Milan, IT	$^{140-150}$Cs	Using lanthanum bromide fast-timing detectors alongside the HPGe clovers to investigate r-process barium isotopes, predicted to exhibit low-energy octupole deformations.	e-log proposal	
IS588	Z. Podolyák, University of Surrey, Guildford, UK	^{207,209}Hg	Study of core breaking and octupole low-spin states in ^{207}Tl through gamma and beta spectroscopy of ^{207,209}Hg beta-decay using a fifth HPGe clover detector, angular correlations providing a method of spin-parity assignment. Preliminary lifetime measurement of ^{209}Hg, making use of the capabilities of the molten lead target at ISOLDE.	e-log proposal	
IS590	C. Sotty, KUL, Leuven, BE	^{69}Mn	Characterization of the low-lying 0$^+$ and 2$^+$ states of ^{68}Ni. First trials were unsuccessful because of the ISOLDE target failure.	e-log proposal	

Thank you for your attention!