

Coordination plan for IDATEN pre-proposals

IDATEN Steering Board (ISB)

IDATEN Steering Board (IDS)

■ Members

Alison Bruce (University of Brighton)

Adam Garnsworthy (TRIUMF)

Magda Gorska (GSI)

Byungsik Hong (CENuM, Korea University)

Eiji Ideguchi (RCNP, Osaka University)

■ Spokespersons

Byul Moon (CENS, IBS)

Paddy Regan (University of Surrey)

Hiroshi Watanabe (Beihang University)

■ In-house contact person

Shunji Nishimura (RIKEN)

■ Ex-officio

Hiroyoshi Sakurai (RIKEN)

Guideline

Case 1: No overlap and the proposed experiment is feasible

- ISB recommends to submit a real proposal to NP-PAC.

Case 2: Feasibility is questioned

- ISB suggests to change the experimental conditions or to consider conducting the experiment at other facilities.

Case 3: Overlap of nuclides/regions with others

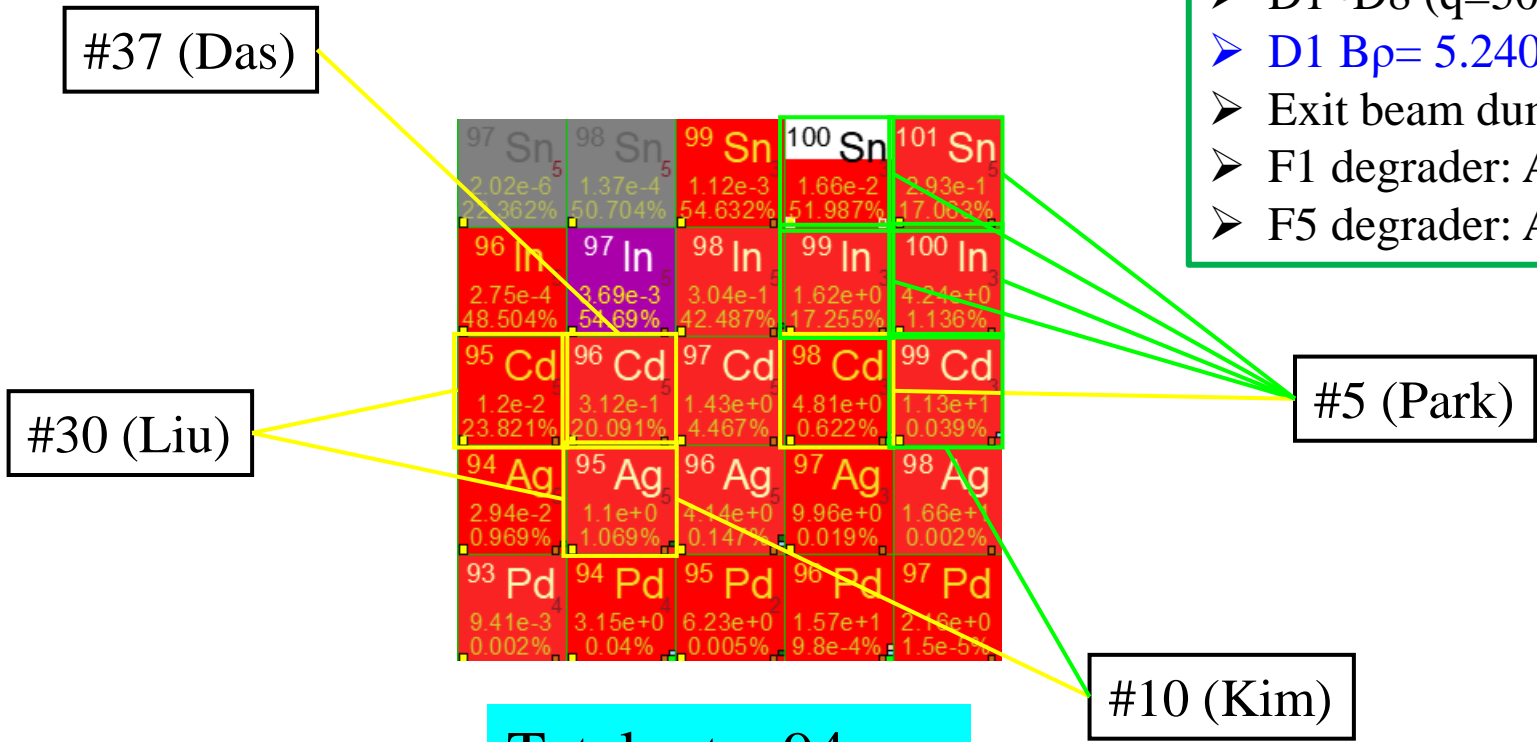
- ISB suggests how to merge the pre-proposals and asks the proponents involved to discuss/solve the issue.

Proponent	#	Title of experiment	Specified nuclide(s)
J. Park	5	New measurements of M1 and E2 transition strengths below ^{100}Sn	$^{100,101}\text{Sn}$, $^{99,100}\text{In}$, ^{98}Cd
Y. Kim	10	Evolution of seniority breaking in Silver isotopes near doubly magic nuclides	^{95}Ag , ^{99}Cd , ^{101}Ag (^{101}Cd ?)
X. Liu	30	Spin-gap isomer study in the N=Z-1 nucleus ^{95}Cd	^{95}Cd
B. Das	37	The competition between the T=0 and the T=1 coupled states in ^{96}Cd : lifetime measurement in the heaviest N=Z nucleus with known excited states	^{96}Cd

Case 3

- Primary beam: ^{124}Xe , 140 pA
- Production target: ^9Be , 4 mm
- D1~D8 (q=50+)
- D1 $B\rho = 5.240 \text{ Tm}$
- Exit beam dump: -123(L), +125(R)
- F1 degrader: Al, 3 mm (wedge)
- F5 degrader: Al, 2 mm (wedge)

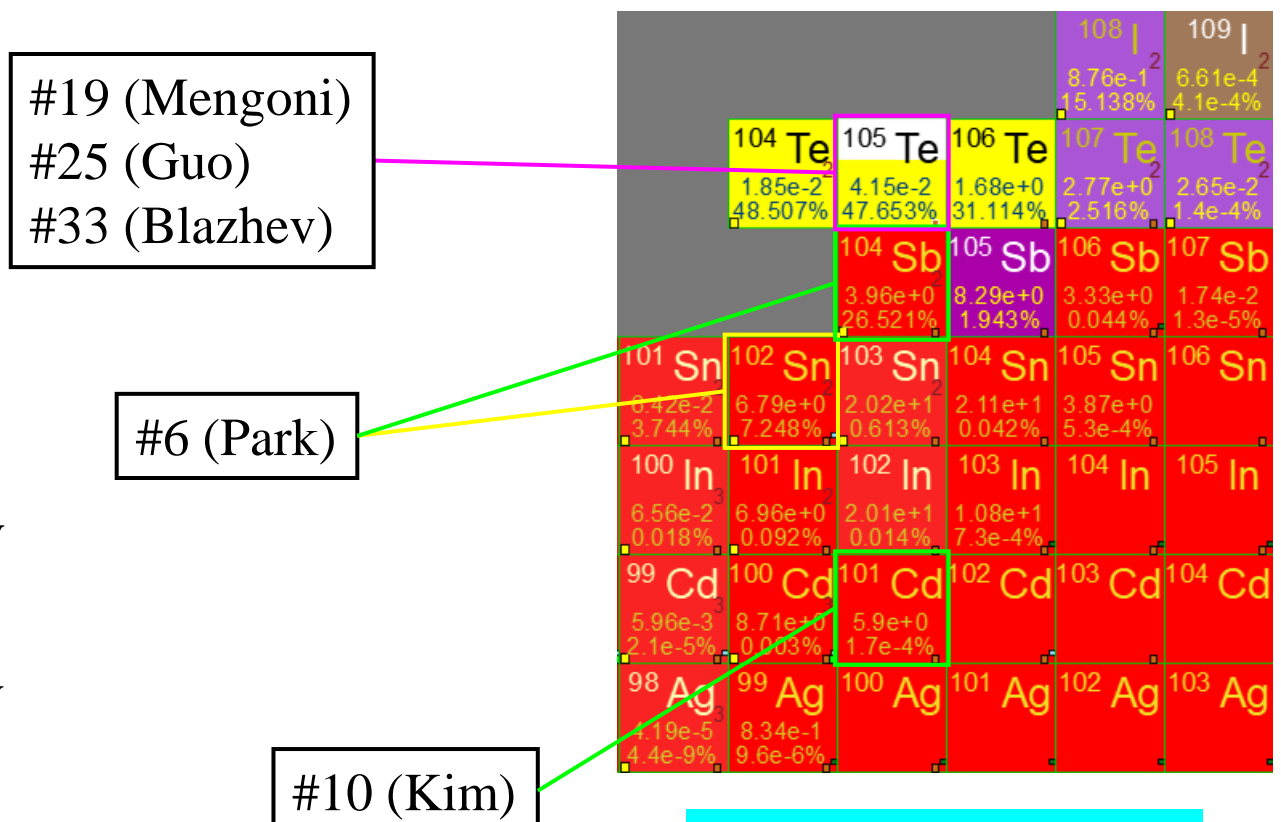
- α decay
- β decay
- IT decay



1 setting?

Proponent	#	Title of experiment	Specified nuclide(s)
J. Park	6	Investigation of shell structure and shape evolution in $^{102,104}\text{Sn}$ with IDATEN	^{102}Sn , ^{104}Sb
Y. Kim	10	Evolution of seniority breaking in Silver isotopes near doubly magic nuclides	^{95}Ag , ^{99}Cd , ^{101}Ag (^{101}Cd ?)
D. Mengoni	19	Core-breaking effects in ^{100}Sn : lifetime measurements in ^{101}Sn	^{105}Te
S. Guo	25	Lifetime measurement of the $5/2^+$ state in ^{101}Sn populated by alpha decay of ^{105}Te	^{105}Te
A. Blazhev	33	Study of spin-flip core-excitations towards ^{100}Sn by lifetimes of "L-forbidden" M1 transitions	$^{105,107}\text{Te}$

Case 3



- α decay
- β decay
- IT decay

- Primary beam: ^{124}Xe , 140 pnA
- Production target: ^9Be , 4 mm
- D1~D8 ($q=52^+$)
- **D1 $B\rho=5.300\text{ Tm}$**
- Exit beam dump: -123(L), +125(R)
- F1 degrader: Al, 3 mm (wedge)
- F5 degrader: Al, 2 mm (wedge)

1 setting?

Total rate: 126 cps

Proponent	#	Title of experiment	Specified nuclide(s)
H. Watanabe	16	Decay spectroscopy of neutron-rich A = 55, 56, 57 isobars relevant to Urca cooling process in the neutron star crust	$^{55,56,57}\text{Ca}$, $^{55,56,57,58}\text{Sc}$

Case 1

#16 (Watanabe)

^{57}Cr	^{58}Cr	^{59}Cr	^{60}Cr	^{61}Cr	^{62}Cr	^{63}Cr
			$3.88\text{e-}8$ $6.8\text{e-}7\%$	$4.26\text{e-}1$ 0.013%	$2.73\text{e-}1$ 0.006%	$3.17\text{e-}5$ $4\text{e-}7\%$
^{56}V	^{57}V	^{58}V	^{59}V	^{60}V	^{61}V	^{62}V
		$3.55\text{e-}2$ 0.003%	$5.24\text{e+}0$ 0.135%	$1.35\text{e+}1$ 0.738%	$2.73\text{e+}0$ 0.184%	$1.63\text{e-}4$ $5.3\text{e-}5\%$
^{55}Ti	^{56}Ti	^{57}Ti	^{58}Ti	^{59}Ti	^{60}Ti	^{61}Ti
$7.13\text{e-}5$ $1.6\text{e-}5\%$	$1.16\text{e+}0$ 0.037%	$9.42\text{e+}0$ 0.307%	$1.96\text{e+}1$ 1.312%	$1.04\text{e+}1$ 3.538%	$3.64\text{e-}1$ 0.783%	$3.4\text{e-}5$ $6.5\text{e-}4\%$
^{54}Sc	^{55}Sc	^{56}Sc	^{57}Sc	^{58}Sc	^{59}Sc	^{60}Sc
$2.71\text{e-}2$ 0.001%	$5.93\text{e+}0$ 0.67%	$6.77\text{e+}0$ 3.299%	$5\text{e+}0$ 5.744%	$9.27\text{e-}1$ 8.752%	$9.87\text{e-}2$ 2.488%	$1.43\text{e-}5$ 0.003%
^{53}Ca	^{54}Ca	^{55}Ca	^{56}Ca	^{57}Ca	^{58}Ca	^{59}Ca
$2.45\text{e-}3$ 0.002%	$6.96\text{e-}1$ 1.46%	$1.3\text{e+}0$ 7.869%	$7.39\text{e-}1$ 10.057%	$7.12\text{e-}2$ 10.629%	$4.71\text{e-}3$ 3.354%	$4.78\text{e-}8$ 0.007%
^{52}K	^{53}K	^{54}K	^{55}K	^{56}K	^{57}K	^{58}K
$9.79\text{e-}5$ $2.4\text{e-}4\%$	$1.84\text{e-}1$ 1.269%	$1.04\text{e-}1$ 9.998%	$2.68\text{e-}2$ 12.161%	$1.04\text{e-}3$ 15.195%	$2.03\text{e-}5$ 6.18%	

- Primary beam: ^{238}U , 70 pA
- Production target: ^9Be , 4 mm
- D1~D8 (q=20+)
- D1 Bρ = 7.995 Tm
- Exit beam dump: -125(L), +125(R)
- F1 degrader: Al, 5 mm (wedge)
- F5 degrader: Al, 2 mm (wedge)

α decay

β decay

IT decay

Total rate: 85 cps

1 setting?

Proponent	#	Title of experiment	Specified nuclide(s)
K. Wimmer	2	Shape coexistence at N=40	^{64}V , ^{66}Mn
B. Olaizola	12	Locating the center of the N=40 Island of Inversion	$^{62,64}\text{V}$

Case 3

#12 (Olaizola w/ Ge beam)

#2 (Wimmer w/ U beam)

^{63}Fe	^{64}Fe	^{65}Fe	^{66}Fe	^{67}Fe	^{68}Fe	^{69}Fe
			2.55e-3 0.001%	2.86e+0 0.081%	9.87e+0 0.159%	4.42e-2 0.002%
^{62}Mn	^{63}Mn	^{64}Mn	^{65}Mn	^{66}Mn	^{67}Mn	^{68}Mn
	6.35e-6 1.7e-5%	1.77e+0 0.033%	1.3e+1 0.358%	2.2e+1 1.353%	7.99e+0 1.493%	1.1e-2 0.031%
^{61}Cr	^{62}Cr	^{63}Cr	^{64}Cr	^{65}Cr	^{66}Cr	^{67}Cr
4.46e-5 2.2e-6%	1.28e+0 0.028%	1.46e+1 1.017%	1.7e+1 2.582%	3.67e+0 4.592%	6.58e-1 4.388%	8.96e-4 0.116%
^{60}V	^{61}V	^{62}V	^{63}V	^{64}V	^{65}V	^{66}V
3.52e-5 4e-6%	1.39e+0 0.088%	4.98e+0 3.26%	2.03e+0 6.758%	2.43e-1 9.612%	3.07e-2 9.127%	1.33e-4 0.277%
^{59}Ti	^{60}Ti	^{61}Ti	^{62}Ti	^{63}Ti	^{64}Ti	^{65}Ti
	3.42e-2 0.086%	3.07e-1 6.232%	2.89e-1 11.544%	2.25e-2 12.64%	2.09e-3 11.377%	1.5e-6 0.484%
^{58}Sc	^{59}Sc	^{60}Sc	^{61}Sc	^{62}Sc	^{63}Sc	^{64}Sc
	1.74e-3 0.048%	3.01e-2 6.923%	8.1e-3 14.273%	8.81e-5 17.395%	2.39e-5 20.151%	1.36e-9 0.212%

- Primary beam: ^{238}U , 70 pA
- Production target: ^9Be , 4 mm
- D1~D8 (q=23+)
- D1 B ρ = 8.025 Tm
- Exit beam dump: -125(L), +125(R)
- F1 degrader: Al, 5 mm (wedge)
- F5 degrader: Al, 2 mm (wedge)

- α decay
- β decay
- IT decay

Total rate: 109 cps

1 setting?

Proponent	#	Title of experiment	Specified nuclide(s)
S. Franchoo	13	Emergence of collectivity in $^{75,77}\text{Cu}$	$^{75,77}\text{Ni}$
S. Ahn	21	The lifetime of low-lying states in the N = 49 isotones, ^{81}Ge and ^{83}Se	$^{81,83}\text{Ga}$, ^{81}Zn
E. Sahin	22	Search for prolate deformed and particle-core coupled states in neutron-rich $^{75,77}\text{Cu}$. Deeper understanding of the low-lying states in odd-odd $^{74,76,78}\text{Cu}$ near ^{78}Ni .	$^{74,75,76,77,78}\text{Ni}$
G. Mukherjee	43	Search of isomeric states in odd-A, neutron-rich nuclei with N = 48, 49	^{77}Cu , ^{79}Ga , ^{79}Zn , ^{81}Ge , ^{83}Se

Case 3

#22 (Sahin)

#43 (Mukherjee)

#21 (Ahn)

#13 (Franchoo)

^{77}Ga	^{78}Ga	^{79}Ga	^{80}Ga	^{81}Ga	^{82}Ga	^{83}Ga
				$2.4e-3$	$2.99e+0$	$3.97e-2$
				$4.8e-7\%$	0.003%	$1.5e-4\%$
^{76}Zn	^{77}Zn	^{78}Zn	^{79}Zn	^{80}Zn	^{81}Zn	^{82}Zn
^{75}Cu	^{76}Cu	^{77}Cu	^{78}Cu	^{79}Cu	^{80}Cu	^{81}Cu
^{74}Ni	^{75}Ni	^{76}Ni	^{77}Ni	^{78}Ni	^{79}Ni	^{80}Ni
^{73}Co	^{74}Co	^{75}Co	^{76}Co	^{77}Co	^{78}Co	^{79}Co
^{72}Fe	^{73}Fe	^{74}Fe	^{75}Fe	^{76}Fe	^{77}Fe	^{78}Fe

^{81}Ge	^{82}Ge	^{83}Ge	^{84}Ge	^{85}Ge	^{86}Ge
^{80}Ga	^{81}Ga	^{82}Ga	^{83}Ga	^{84}Ga	^{85}Ga
^{79}Zn	^{80}Zn	^{81}Zn	^{82}Zn	^{83}Zn	^{84}Zn
^{78}Cu	^{79}Cu	^{80}Cu	^{81}Cu	^{82}Cu	^{83}Cu
^{77}Ni	^{78}Ni	^{79}Ni	^{80}Ni	^{81}Ni	^{82}Ni

➤ Primary beam: ^{238}U , 70 pA

➤ Production target: ^9Be , 4 mm

➤ D1~D8 (q=31+)

➤ D1 Bp= 8.140 Tm

➤ Exit beam dump: -125(L), +125(R)

➤ F1 degrader: Al, 5 mm (wedge)

➤ F5 degrader: Al, 2 mm (wedge)

2 settings?

Total rate: 96 cps

Total rate: 120 cps

Proponent	#	Title of experiment	Specified nuclide(s)
Q. Zeng	35	Lifetime measurements of the low-lying states in $^{88,90,92,94}\text{Se}$ isotopes	$^{88,90}\text{As}$, $^{92,94}\text{Se}$

Case 1

- Primary beam: ^{238}U , 70 pA
- Production target: ^9Be , 4 mm
- D1~D8 (q=33+)
- D1 $B\rho = 8.150 \text{ Tm}$
- Exit beam dump: -125(L), +125(R)
- F1 degrader: Al, 5 mm (wedge)
- F5 degrader: Al, 2 mm (wedge)

- Primary beam: ^{238}U , 70 pA
- Production target: ^9Be , 4 mm
- D1~D8 (q=34+)
- D1 $B\rho = 8.135 \text{ Tm}$
- Exit beam dump: -125(L), +125(R)
- F1 degrader: Al, 5 mm (wedge)
- F5 degrader: Al, 2 mm (wedge)

#35 (Zeng)

^{89}Br	^{90}Br	^{91}Br	^{92}Br	^{93}Br	^{94}Br
			$2.48\text{e-}3$	$1.18\text{e+}0$	$6.9\text{e-}4$
			$2.3\text{e-}7\%$	$5\text{e-}4\%$	$3.3\text{e-}6\%$
^{88}Se	^{89}Se	^{90}Se	^{91}Se	^{92}Se	^{93}Se
	$1.18\text{e-}2$	$1.27\text{e+}1$	$1.58\text{e+}1$	$2.78\text{e+}0$	$1.12\text{e-}3$
	$7.5\text{e-}7\%$	0.004%	0.052%	0.075%	$7.9\text{e-}4\%$
^{87}As	^{88}As	^{89}As	^{90}As	^{91}As	^{92}As
$4.65\text{e-}1$	$2.43\text{e+}1$	$3.5\text{e+}1$	$4.68\text{e+}0$	$3.05\text{e-}1$	$5.41\text{e-}5$
$7.1\text{e-}5\%$	0.031%	0.337%	1.067%	0.865%	0.007%
^{86}Ge	^{87}Ge	^{88}Ge	^{89}Ge	^{90}Ge	^{91}Ge
$5.66\text{e-}1$	$8.12\text{e+}0$	$2.54\text{e+}0$	$1.07\text{e-}1$	$3.74\text{e-}3$	$2.65\text{e-}7$
0.002%	0.552%	2.419%	4.373%	3.161%	0.044%
^{85}Ga	^{86}Ga	^{87}Ga	^{88}Ga	^{89}Ga	^{90}Ga
$1.18\text{e-}2$	$1.54\text{e-}1$	$2.76\text{e-}2$	$1.32\text{e-}4$	$9.72\text{e-}6$	$6.82\text{e-}10$
0.005%	1.641%	6.832%	10.4%	6.466%	0.063%

Total rate: 109 cps

^{93}Kr	^{94}Kr	^{95}Kr	^{96}Kr	^{97}Kr	^{98}Kr
		$7.3\text{e-}2$	$2.41\text{e+}1$	$6.91\text{e+}0$	$8.72\text{e-}2$
		$8.7\text{e-}6\%$	0.017%	0.06%	0.007%
^{92}Br	^{93}Br	^{94}Br	^{95}Br	^{96}Br	^{97}Br
$2.08\text{e-}3$	$1.96\text{e+}1$	$2.04\text{e+}1$	$1.35\text{e+}1$	$1.22\text{e+}0$	$6.04\text{e-}3$
$1.9\text{e-}7\%$	0.008%	0.097%	0.569%	1.023%	0.063%
^{91}Se	^{92}Se	^{93}Se	^{94}Se	^{95}Se	^{96}Se
$6.06\text{e-}1$	$1.4\text{e+}1$	$1.93\text{e+}0$	$3.65\text{e-}1$	$1.48\text{e-}2$	$1.94\text{e-}5$
0.002%	0.378%	1.357%	3.05%	3.928%	0.302%
^{90}As	^{91}As	^{92}As	^{93}As	^{94}As	^{95}As
$5.27\text{e-}2$	$5.84\text{e-}1$	$3.68\text{e-}2$	$4.35\text{e-}3$	$2.12\text{e-}5$	$8.09\text{e-}8$
0.012%	1.656%	4.991%	7.965%	9.072%	0.56%
^{89}Ge	^{90}Ge	^{91}Ge	^{92}Ge	^{93}Ge	^{94}Ge
$3.71\text{e-}4$	$4.07\text{e-}3$	$6.66\text{e-}5$	$1.07\text{e-}5$	$6.1\text{e-}8$	$4.08\text{e-}10$
0.015%	3.452%	11.267%	14.635%	14.661%	1.276%

Total rate: 104 cps

2 settings?

Proponent	#	Title of experiment	Specified nuclide(s)
S. Bae	18	Lifetime measurement for excited states in $^{100,102}\text{Sr}$: Systematic study for shape coexistence over N=60 region	^{100}Rb , $^{100,102}\text{Rb}$
T. Bhattacharjee	31	Exploring Intertwined Quantum Phase Transition in Zr isotopes with Lifetime measurement	$^{100,102}\text{Sr}$

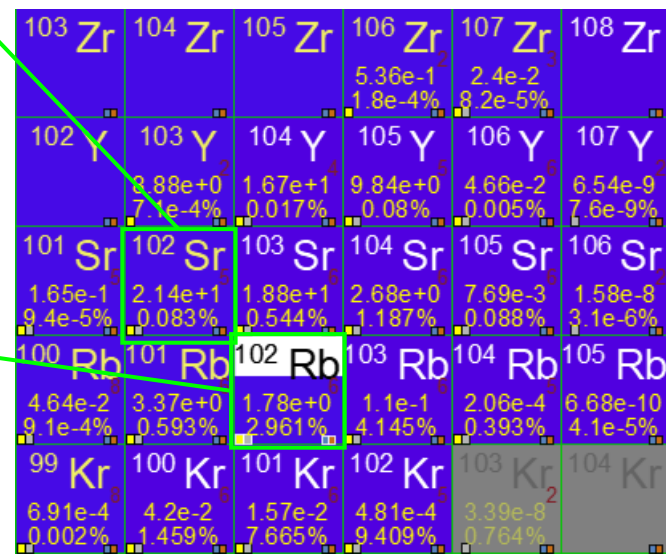
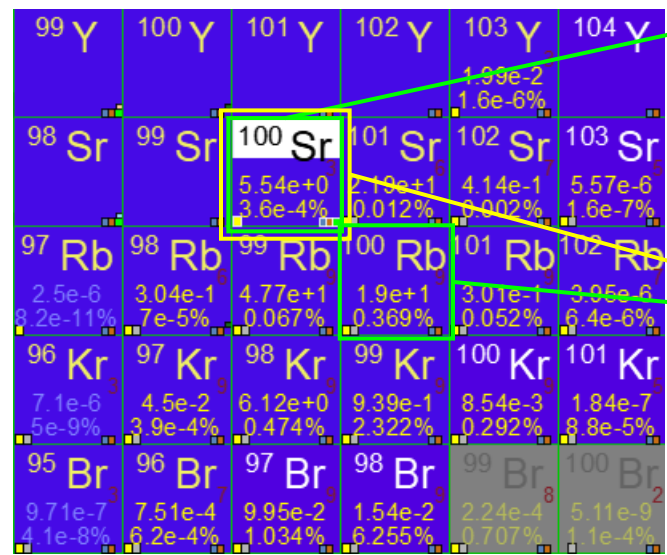
Case 3

- Primary beam: ^{238}U , 70 pA
- Production target: ^9Be , 4 mm
- D1~D8 (q=38+)
- D1 $B\rho = 8.060 \text{ Tm}$
- Exit beam dump: -125(L), +125(R)
- F1 degrader: Al, 5 mm (wedge)
- F5 degrader: Al, 2 mm (wedge)

- Primary beam: ^{238}U , 70 pA
- Production target: ^9Be , 4 mm
- D1~D8 (q=37+)
- D1 $B\rho = 8.070 \text{ Tm}$
- Exit beam dump: -125(L), +125(R)
- F1 degrader: Al, 5 mm (wedge)
- F5 degrader: Al, 2 mm (wedge)

#31 (Bhattacharjee)

#18 (Bae)



Total rate: 102 cps

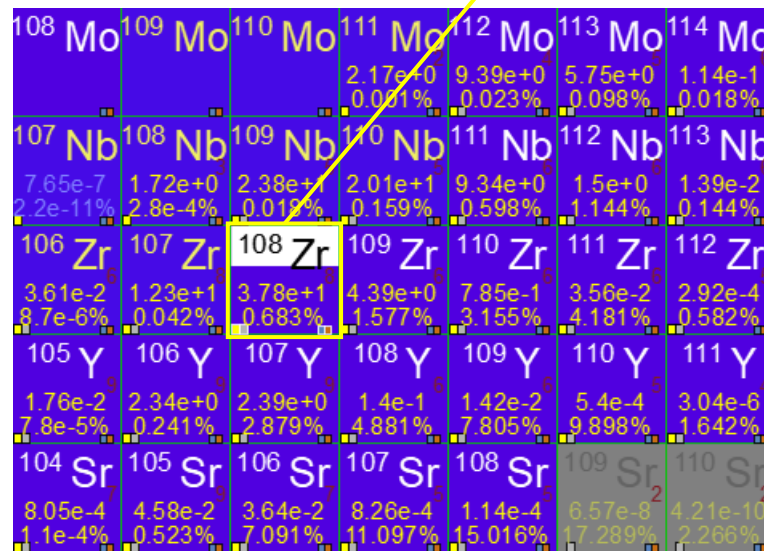
Total rate: 85 cps

2 settings?

Proponent	#	Title of experiment	Specified nuclide(s)
B. Moon	4	Nuclear shape of ^{108}Zr	^{108}Zr
A. Bruce	7	Lifetime of excited states in ^{108}Zr	^{108}Zr

Case 3

#4 (Moon)
#7 (Bruce)



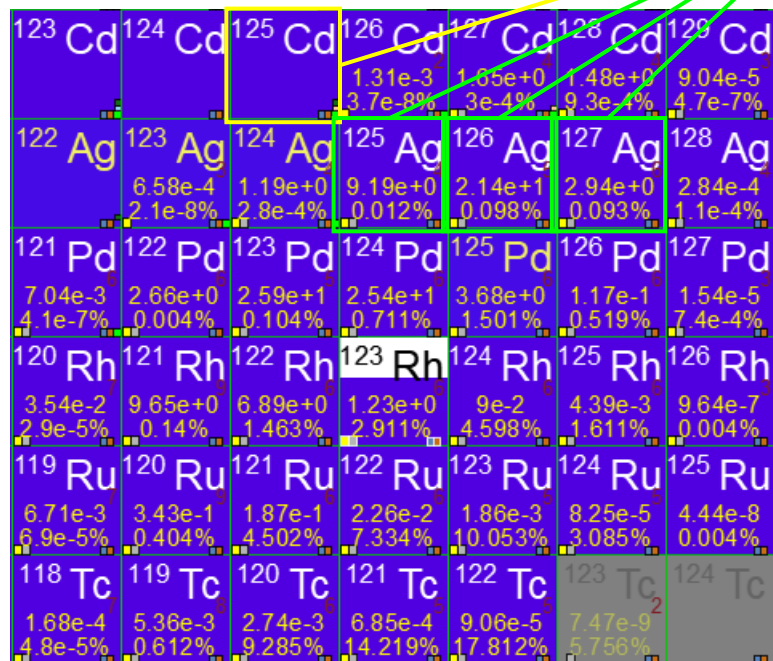
- Primary beam: ^{238}U , 70 pA
- Production target: ^9Be , 4 mm
- D1~D8 (q=40+)
- D1 $B\rho = 8.005\text{ Tm}$
- Exit beam dump: -125(L), +125(R)
- F1 degrader: Al, 5 mm (wedge)
- F5 degrader: Al, 2 mm (wedge)

1 setting?

Total rate: 135 cps

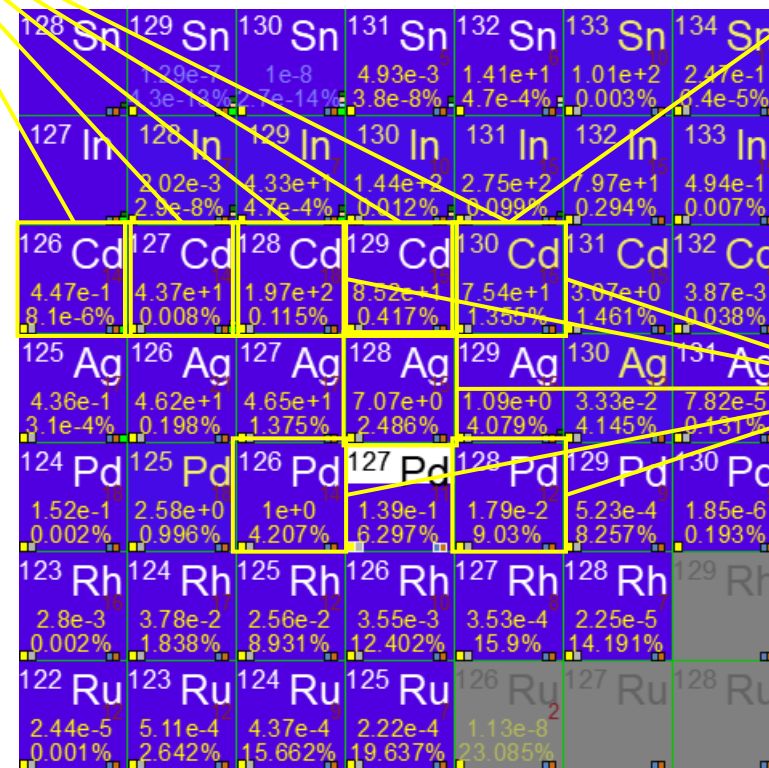
Proponent	#	Title of experiment	Specified nuclide(s)
H. Watanabe	8	Nuclear structure study below ^{132}Sn by lifetime measurement of excited states	$^{128,130}\text{Cd}$, ^{128}Ag , $^{126,128}\text{Pd}$
A. Jungclaus	9	Measurement of excited-state lifetimes in ^{130}Cd	^{130}Cd
Z. Chen	20	Exploring the neutron shell evolution around ^{132}Sn with fast-timing lifetime measurement	$^{121,123,125,127,129,131}\text{In}$, $^{119,121,123,125,127,129}\text{Ag}$, $^{117,119,121,123,125,127}\text{Rh}$
L.M. Fraile	42	Investigation of the structure of odd-A Cd isotopes	$^{125,126,127,128,129,130}\text{Cd}$, $^{125,126,127}\text{Ag}$

Case 3



#42 (Fraile)

#9 (Jungclaus)



#8 (Watanabe)

#20 (Chen)

2 settings?

Total rate: 94 cps
 ⇒ Active stopper

Total rate: 1171 cps ⇒ Passive stopper

Proponent	#	Title of experiment	Specified nuclide(s)
B. Moon	3	Seniority nature in nuclei beyond ^{132}Sn	$^{136,137}\text{Sn}$, $^{137,138,139}\text{Sb}$
Q. Zeng	29	Lifetime measurements of the $5/2^+$ states in ^{133}Sb and ^{135}I	^{133}Sn , ^{135}Te
R. Lozeva	34	Evolution of collectivity beyond ^{132}Sn	$^{134-139}\text{Sn}$, $^{136-142}\text{Te}$, $^{141-143}\text{I}$, $^{134-136}\text{In}$

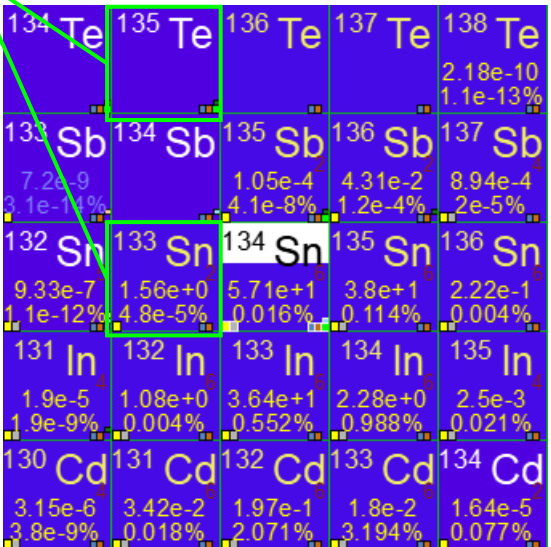
Case 3

- Primary beam: ^{238}U , 70 pA
- Production target: ^9Be , 4 mm
- D1~D8 (q=50+)
- D1 B ρ = 7.905 Tm
- Exit beam dump: -125(L), +125(R)
- F1 degrader: Al, 5 mm (wedge)
- F5 degrader: Al, 2 mm (wedge)

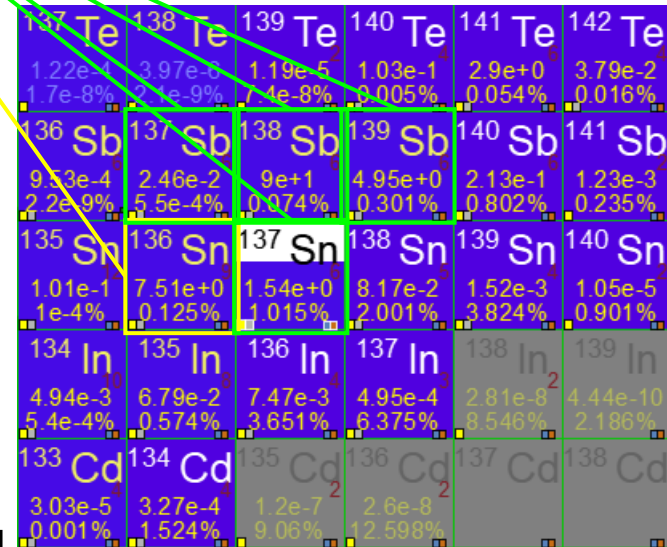
#29 (Zeng)

#3 (Moon)

#34 (Lozeva)



Total rate: 138 cps



Total rate: 109 cps

2 settings?

Proponent	#	Title of experiment	Specified nuclide(s)
B. Ding	26	Lifetime measurements of the first 3- states in $^{144,146,148}\text{Ce}$	$^{144,146,148}\text{La}$
H. Watanabe	38	Study of electric dipole moments in reflection-asymmetric Ba isotopes	$^{148,150}\text{Cs}$
S. Nag	39	Evolution of octupole characteristics in mass 150 region	$^{143,145,147}\text{La,Ba}$

- Primary beam: ^{238}U , 70 pA
- Production target: ^9Be , 4 mm
- D1~D8 (q=57+)
- D1 B ρ = 7.485 Tm
- Exit beam dump: -125(L), +66(R)
- F1 degrader: Al, 5 mm (wedge)
- F5 degrader: Al, 2 mm (wedge)

Case 3

- Primary beam: ^{238}U , 70 pA
- Production target: ^9Be , 4 mm
- D1~D8 (q=55+)
- D1 B ρ = 7.675 Tm
- Exit beam dump: -125(L), +95(R)
- F1 degrader: Al, 5 mm (wedge)
- F5 degrader: Al, 2 mm (wedge)

#26 (Ding)

^{148}Ce	^{149}Ce	^{150}Ce	^{151}Ce
	1.1e-3 3.5e-8%	6.87e-1 1e-4%	5.06e-1 1e-5%
^{147}La	^{148}La	^{149}La	^{150}La
4.76e-5 6.1e-10%	3.71e+0 2.8e-4%	2.56e+1 0.019%	6.45e+0 5e-4%
^{146}Ba	^{147}Ba	^{148}Ba	^{149}Ba
8.89e-7 5.1e-11%	2.05e-3 9.4e-7%	1.97e-3 1.6e-5%	1.96e+1 0.009%
^{145}Cs	^{146}Cs	^{147}Cs	^{148}Cs
6.7e-6 2.4e-9%	1.01e+0 0.006%	1.8e+0 0.501%	5.75e-3 0.019%
^{144}Xe	^{145}Xe	^{146}Xe	^{147}Xe
	4.1e-2 0.009%	3.1e+1 0.886%	4.58e-2 0.054%

Total rate: 118 cps

#39 (Nag)

^{148}La	^{149}La	^{150}La	^{151}La	^{152}La	^{153}La
1.79e-3 1.2e-7%	1.2e-4 7.6e-8%	5.15e-4 3.1e-8%	1.24e+0 4.4e-4%	2.52e+0 0.014%	8.17e-1 0.033%
^{147}Ba	^{148}Ba	^{149}Ba	^{150}Ba	^{151}Ba	^{152}Ba
5.09e-2 4.2e-10%	4.99e-2 3.3e-4%	4.6e+1 0.017%	3e+1 0.152%	2.34e+0 0.422%	2.87e-1 0.349%
^{146}Cs	^{147}Cs	^{148}Cs	^{149}Cs	^{150}Cs	^{151}Cs
3.07e-2 2.3e-6%	7.92e-2 0.018%	1.8e-1 0.464%	8.96e+0 0.978%	3.37e-1 1.806%	7.65e-3 1.177%
^{145}Xe	^{146}Xe	^{147}Xe	^{148}Xe	^{149}Xe	^{150}Xe
2.65e-3 1.6e-5%	5.21e+0 0.121%	1.83e+0 1.762%	1.15e-1 3.212%	3.03e-3 4.78%	6.48e-5 2.296%
^{144}Xe	^{145}Xe	^{146}Xe	^{147}Xe	^{148}Xe	^{149}Xe
5.3e-3 2.2e-5%	7.57e-2 0.219%	2e-2 4.127%	3.81e-4 7.101%	5.52e-9 9.312%	

Total rate: 102 cps

2 settings?

S. Pascu	14	Study of the deformation pattern in the highly-deformed rare-earth region	$^{168,170}\text{Dy}$, $^{162,164,166}\text{Gd}$, $^{158,160,162}\text{Sm}$, $^{154,156,158}\text{Nd}$, $^{150,152,154}\text{Ce}$
S. Bae	23	Study on the shape evolution of the deformed even-even Nd and Sm isotopes with $N = 96, 98$ using lifetime measurement for first 2^+ states	$^{156,158}\text{Nd}$, ^{158}Pm , ^{160}Sm
E. Ideguchi	24	Study of shape evolution in $Z\sim 60$ nuclei	$Z=56-64$, $N=92-102$ around ^{160}Nd
V. Werner	44	Test of $B(E2)$ strengths vs. low $E(2^+)$ energies in neutron-rich Nd isotopes	$^{158,160}\text{Nd}$

Case 3

- Primary beam: ^{238}U , 70 pnA
- Production target: ^9Be , 4 mm
- D1~D8 ($q=60+$)
- D1 $B\rho = 7.340 \text{ Tm}$
- Exit beam dump: -125(L), +44(R)
- F1 degrader: Al, 5 mm (wedge)
- F5 degrader: Al, 2 mm (wedge)

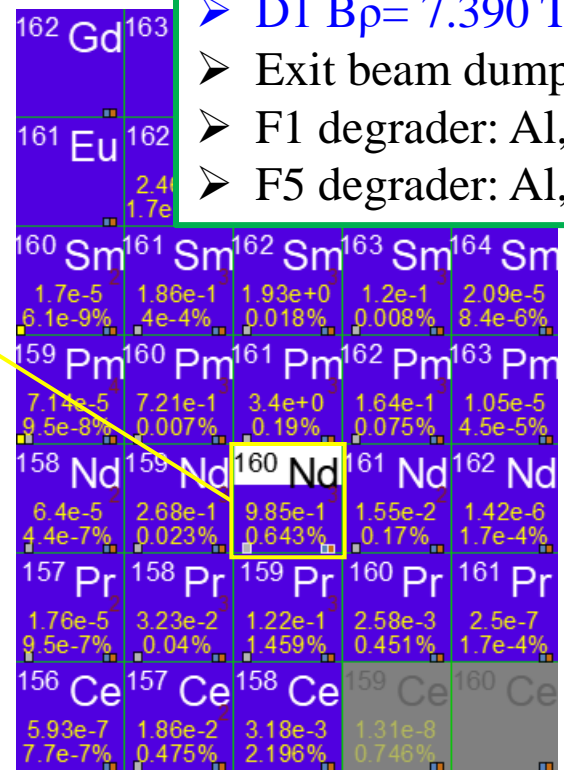
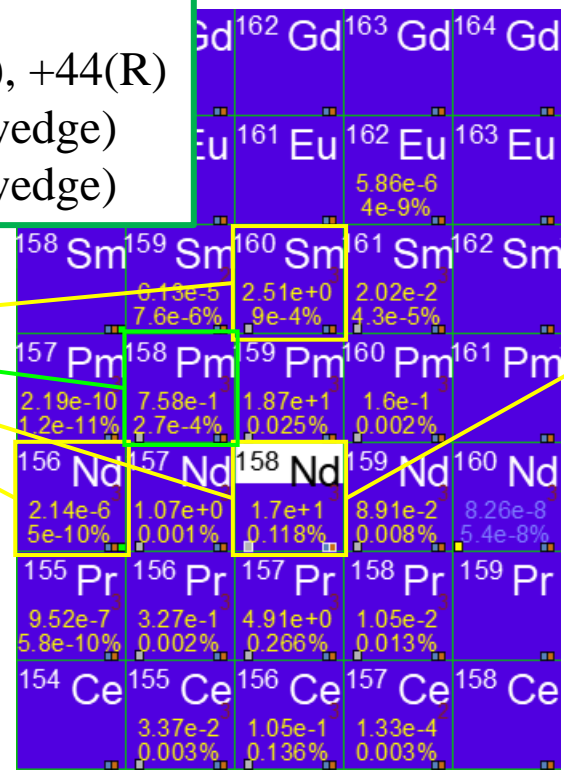
- Primary beam: ^{238}U , 70 pnA
- Production target: ^9Be , 4 mm
- D1~D8 ($q=60+$)
- D1 $B\rho = 7.390 \text{ Tm}$
- Exit beam dump: -125(L), +51(R)
- F1 degrader: Al, 5 mm (wedge)
- F5 degrader: Al, 2 mm (wedge)

#23 (Bae)

#44 (Werner)

#14 (Pascu)

#24 (Ideguchi)



Total rate: 90 cps

Total rate: 84 cps

2 settings?

Proponent	#	Title of experiment	Specified nuclide(s)
S. Pascu	14	Study of the deformation pattern in the highly-deformed rare-earth region	$^{168,170}\text{Dy}$, $^{162,164,166}\text{Gd}$, $^{158,160,162}\text{Sm}$, $^{154,156,158}\text{Nd}$, $^{150,152,154}\text{Ce}$

Case 1 (or 3)

^{167}Ho 2.05e-1 1.3e-4%	^{168}Ho 1.84e-2 2e-7%	^{169}Ho 7.12e-3 3.2e-4%	^{170}Ho 3.58e-2 0.006%	^{171}Ho 1.04e-2 0.019%	^{172}Ho 1.07e-3 0.013%	^{173}Ho 3.81e-2 0.002%
^{166}Dy 4.78e-1 0.001%	^{167}Dy 1.07e-2 1.2e-5%	^{168}Dy 2.44e-2 0.003%	^{169}Dy 5.47e-2 0.056%	^{170}Dy 9.86e+0 0.102%	^{171}Dy 1.08e+0 0.06%	^{172}Dy 1.46e-2 0.003%
^{165}Tb 1.08e-1 3.7e-11%	^{166}Tb 2.17e-3 2e-4%	^{167}Tb 2.31e+0 0.02%	^{168}Tb 2.72e+1 0.281%	^{169}Tb 9.62e+0 0.389%	^{170}Tb 4.4e-1 0.112%	^{171}Tb 2.53e-3 0.003%
^{164}Gd 3.49e+0 8.9e-8%	^{165}Gd 5.73e-1 0.001%	^{166}Gd 1.22e+1 0.116%	^{167}Gd 1.3e+1 0.638%	^{168}Gd 2.31e+0 0.613%	^{169}Gd 5.09e-2 0.084%	^{170}Gd 5.46e-5 7.5e-4%
^{163}Eu 4.01e-1 1.1e-6%	^{164}Eu 6.64e-1 0.005%	^{165}Eu 6.67e+0 0.288%	^{166}Eu 3.49e+0 0.964%	^{167}Eu 3.09e-1 0.592%	^{168}Eu 2.36e-3 0.037%	^{169}Eu 8.32e-7 1.1e-4%
^{162}Sm 2.24e-2 1e-5%	^{163}Sm 3.86e-1 0.02%	^{164}Sm 1.45e+0 0.468%	^{165}Sm 2.7e-1 0.943%	^{166}Sm 1.08e-2 0.324%	^{167}Sm 2.71e-5 0.009%	^{168}Sm 1.66e-9 4.1e-6%

- Primary beam: ^{238}U , 70 pA
- Production target: ^9Be , 5 mm
- D1 (q=64+), D2~D8 (q=65+)
- D1 $B\rho = 6.825\text{ Tm}$
- Exit beam dump: -125(L), +11(R)
- F1 degrader: Al, 2 mm (wedge)
- F5 degrader: Al, 1.5 mm (wedge)

Total rate: 117 cps

#14 (Pascu)

1 setting?

Proponent	#	Title of experiment	Specified nuclide(s)
J. Ha	15	First 2 ⁺ state lifetime measurements for the neutron-rich Yb and Er isotopes: a quest for strong deformation around N = 110	^{174,176} Ho, ¹⁷⁸ Er

Case 1

#15 (Ha)

¹⁷⁴ Tm	¹⁷⁵ Tm	¹⁷⁶ Tm	¹⁷⁷ Tm	¹⁷⁸ Tm	¹⁷⁹ Tm	¹⁸⁰ Tm
1.1e-2 5.2e-4%	3.59e-3 1.6e-8%	1.36e-4 9.7e-5%	3.04e-5 0.008%	2.89e-5 0.073%	4.74e-6 0.17%	3.18e-7 0.124%
¹⁷³ Er	¹⁷⁴ Er	¹⁷⁵ Er	¹⁷⁶ Er	¹⁷⁷ Er	¹⁷⁸ Er	¹⁷⁹ Er
8.64e-3 0.004%	9.3e-4 4.4e-6%	3.16e-5 0.003%	4.59e-1 0.065%	1.02e-1 0.029%	1.22e-1 0.205%	1e-2 0.187%
¹⁷² Ho	¹⁷³ Ho	¹⁷⁴ Ho	¹⁷⁵ Ho	¹⁷⁶ Ho	¹⁷⁷ Ho	¹⁷⁸ Ho
1.9e-3 5.3e-9%	2.45e-1 0.008%	1.5e-1 3.2e-7%	3.07e-1 0.303%	1.64e-1 0.816%	2.12e-2 0.787%	6.81e-4 0.174%
¹⁷¹ Dy	¹⁷² Dy	¹⁷³ Dy	¹⁷⁴ Dy	¹⁷⁵ Dy	¹⁷⁶ Dy	¹⁷⁷ Dy
4.03e-1 1.5e-6%	4.37e-2 0.003%	1.61e-1 0.16%	1.07e-1 0.992%	2.45e-2 1.586%	1.64e-3 0.81%	
¹⁷⁰ Tb	¹⁷¹ Tb	¹⁷² Tb	¹⁷³ Tb	¹⁷⁴ Tb	¹⁷⁵ Tb	¹⁷⁶ Tb
5.84e-2 4.5e-5%	2.06e-2 0.023%	5.66e-2 0.581%	2.83e-2 2.014%	4.82e-3 2.093%		
¹⁶⁹ Gd	¹⁷⁰ Gd	¹⁷¹ Gd	¹⁷² Gd	¹⁷³ Gd	¹⁷⁴ Gd	¹⁷⁵ Gd
4.23e-3 7.5e-4%	9.74e-3 0.128%	1.6e-2 1.479%	3.07e-3 2.905%			

- Primary beam: ²³⁸U, 70 p nA
- Production target: ⁹Be, 5 mm
- D1 (65+), D2~D8 (q=66+)
- D1 B_p = 6.905 Tm
- Exit beam dump: -125(L), +24(R)
- F1 degrader: Al, 2 mm (wedge)
- F5 degrader: Al, 1.5 mm (wedge)

Total rate: 37 cps

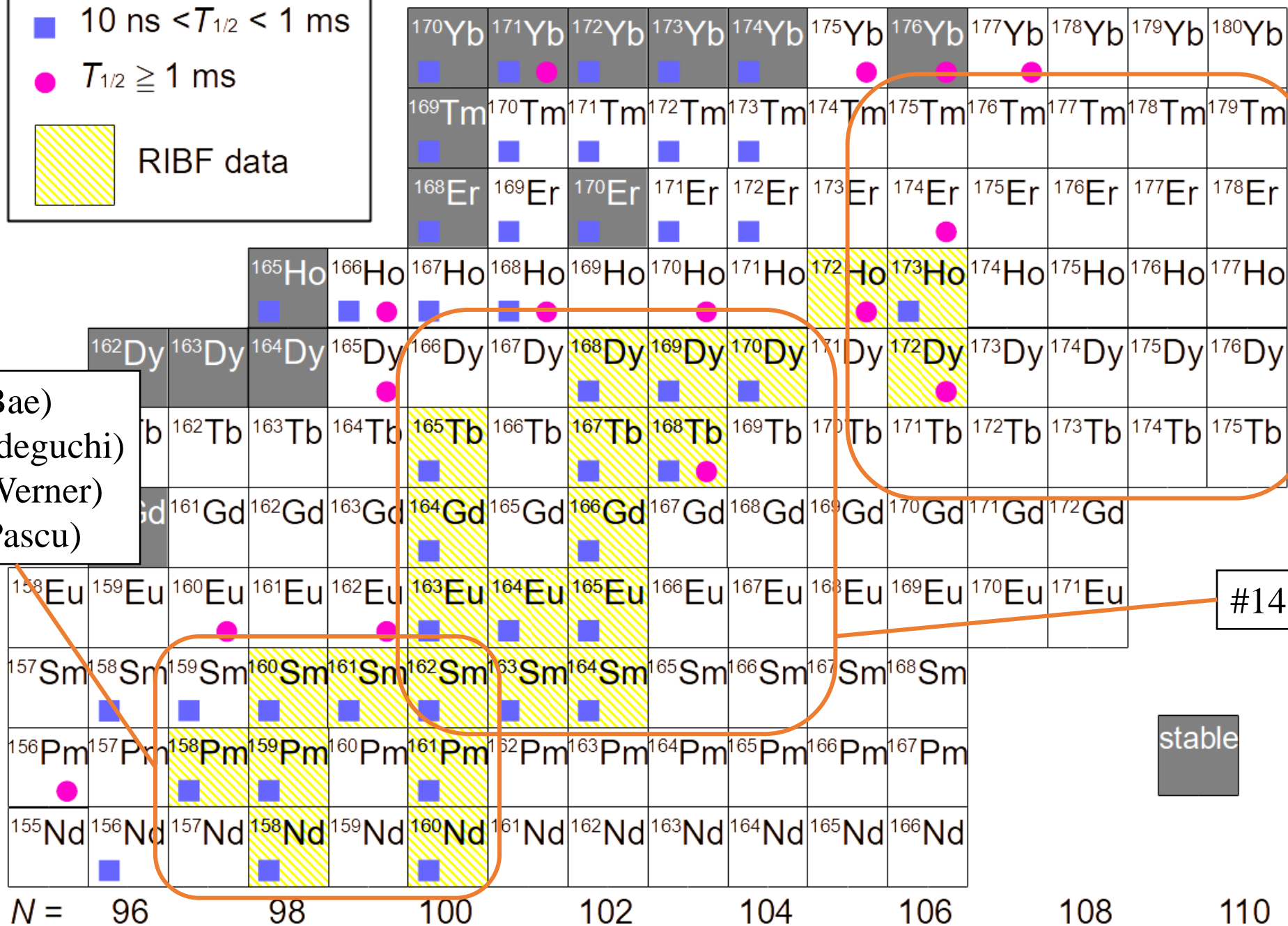
1 setting?

Isomer

■ $10 \text{ ns} < T_{1/2} < 1 \text{ ms}$

● $T_{1/2} \geq 1 \text{ ms}$

▨ RIBF data



#15 (Ha)

#23 (Bae)
#24 (Ideguchi)
#44 (Werner)
#14 (Pascu)

#14 (Pascu)

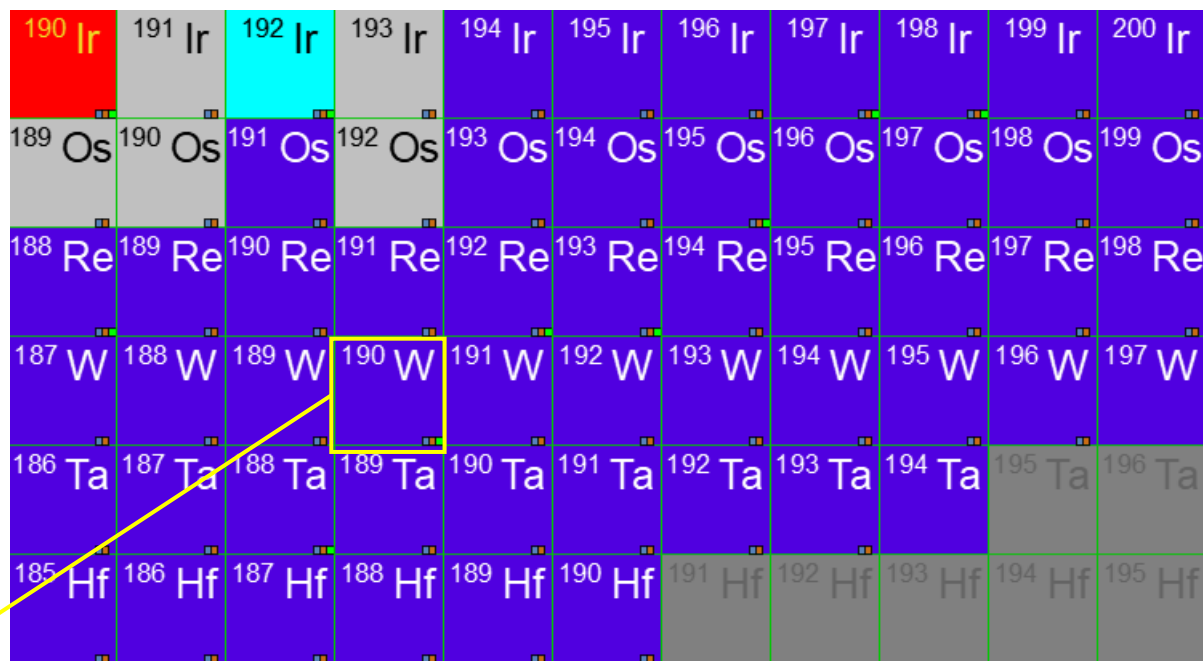
stable

2 or 3 proposals
for the rare-earth
region?

Proponent	#	Title of experiment	Specified nuclide(s)
S. Pascu	11	Study of the prolate-oblate shape transition in the neutron-rich heavy-mass region	$^{194,196,198}\text{Os}$, $^{188,190,192,194}\text{W}$, $^{186,188,190}\text{Hf}$
X. Liu	36	Half-life of the yrast 2^+ state in ^{190}W	^{190}W

Case 3 or Case 2

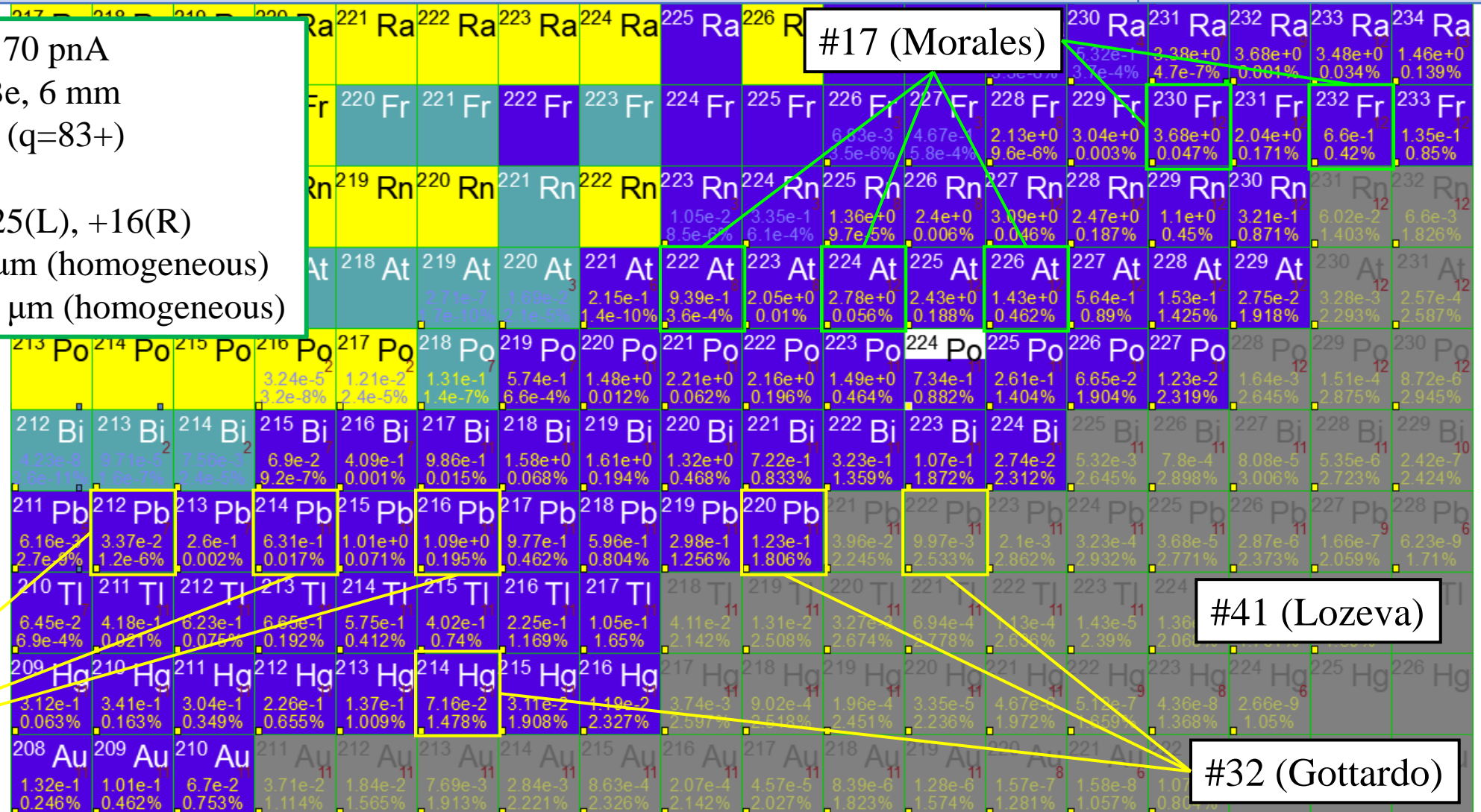
#11 (Pascu w/ **Pb** beam)



#36 (Liu w/ **U** beam)

A.I. Morales	17	Lifetime measurements in the south-east frontier of the actinide island of octupole deformation and beyond	$^{222,224,226}\text{At}$, $^{230,232}\text{Fr}$
Z. Liu	27	Lifetime measurements of the low-lying states in $^{212, 214, 216}\text{Pb}$	$^{212,214,216}\text{Pb}$
A. Gottardo	32	Exploring nuclear structure beyond N=126	$^{220,222}\text{Pb}$, ^{214}Hg
R. Lozeva	41	Seniority breaking in n-rich isotopes beyond ^{208}Pb	$^{214-216}\text{Pb}$, $^{208-212}\text{Hg}$, $^{216-220}\text{Bi}$

- Primary beam: ^{238}U , 70 pnA
- Production target: ^9Be , 6 mm
- D1 (q=82+), D2~D8 (q=83+)
- D1 Bp= 6.530 Tm
- Exit beam dump: -125(L), +16(R)
- F1 degrader: Al, 25 μm (homogeneous)
- F5 degrader: Al, 112 μm (homogeneous)



Total rate: 87 cps

Case 3

#27 (Liu)

#41 (Lozeva)

#32 (Gottardo)

Proponent	#	Title of experiment	Specified nuclide(s)
Z. Liu	28	Lifetime measurements of the low-lying states in ^{216}Th	^{216}Th
U. Datta	40	$^{12}\text{C}+^{12}\text{C}$ fusion rates from resonances at astrophysical energies	$^{24,25,26}\text{Al}$

Case 2

Requirements

- **Consider suggestions/recommendation from ISB**
 - Feasibility
 - BigRIPS setting(s) ※If necessary, please invite the BigRIPS team as collaborators.
 - Merged with others (for Case 3)
- **Let ISB know your decision (e-mail to hiroshi@ribf.riken.jp by August 15)**
 - Collaboration style (spokesperson, co-spokesperson, etc.)
 - Title of experimental proposal
 - (Rough) estimate of beamtime
- **Prepare a good physics proposal**

Timeline

July 6-8

- Collaboration meeting

~July 20

- Recommendation/suggestion from ISB to each proponent

~August 15

- Feedback from the proponents to ISB (e-mail to HW)

~August 31

- Announcement of a list of proposals (with Spokesperson's name and e-mail address) to the IDATEN collaboration

October xx

- Proposal submission to RIBF NP-PAC