ID	Date	Author	Subject	Type	Category	RUN Number	Beam	Energy	Target
103	Wed Nov 9 17:10:07 2016	BRIKEN collaboration Roger, Jorge, Jose, Ale	Sync pulse sent		DAQ				

Sync pulsed sent at 17:07
We found that the dacqs were not syncronized, possibly all data taken during the morning are not correlated.

ID	Date	Author	Subject	Type	Category	RUN Number	Beam	Energy	Target
102	Wed Nov 9 16:14:13 2016	BRIKEN collaboration: Iris, Ale, Oscar, Tom	BRIKEN run		BRIKEN		767778Ni		

Start 16:14
Stop 17:25

Setup:
- no Target @ F7 (but at F5)
- C 6mm @ F11

They changed settings towards the end of the file
Also we had to send a sync pulse because we realized
dacqs were not synchronized.

BRIKEN:
-Run number: 016
-Root file: 161109_xxxx_767778Ni_016.root
-dlt: 161109_1507_767778Ni_016.dlt
-Conf: 161107

AIDA:
-Run: R15

Rates (Hz):
F11: 450 Hz
Clovers: 500 Hz
F11-BRIKEN:
BRIKEN: 180 Hz
VETO-T: 220 Hz
VETO-B: 110 Hz
AIDA:

ID	Date	Author	Subject	Type	Category	RUN Number	Beam	Energy	Target
101	Wed Nov 9 15:19:50 2016	BRIKEN collaboration: Iris, Oscar	BRIKEN		BRIKEN		767778Ni		

Start 15:07
Stop 16:05
At around 26e6 ms we removed the degrader- rates in AIDA DSSD 4-6 increased (were almost 0 in DSSD6 before), as
well as AIDA plastic. We put the degrader back in.

Setup:
- no Target @ F7 (but at F5)
- no target (empty) @ F11

BRIKEN:
-Run number: 015
-Root file: 161109_1607_767778Ni_015.root
-dlt: 161109_1507_767778Ni_015.dlt
-Conf: 161107

AIDA:
-Run: R14

Rates (Hz):
F11: 480 Hz
Clovers: 480 Hz
F11-BRIKEN:
BRIKEN: 200 Hz
VETO-T: 30 Hz
VETO-B: 24 Hz
AIDA:

ID	Date	Author	Subject	Type	Category	RUN Number	Beam	Energy	Target
100	Wed Nov 9 14:21:06 2016	BRIKEN collaboration: Iris, Ale	BRIKEN clovers: comparison		BRIKEN		747576Ni		

We compared clovers D4 (left upstream) and G7 (right upstream). D4 is shown in black, G7 in red. G7 is less
intense since only 3 out of 4 crystals are operating. We identify some lines which are stronger in G7(red) than
in D4(black). Our assumption is that these are coming from isotopes which are implanted much closer to G7.

Some of these lines are: 277 keV (could be from 78Ge-> 78As); 614 keV (from 78As->78Se); 619 keV (from
78Ga->78Ge). This hypothesis needs to be checked with the implantation pattern in the LISE file.

Some other lines are barely visible in G7 but visible in D4, e.g. 885 keV, 1095 keV. These could be A~70,71 isotopes.

One strange thing is visible at 2354 keV: D4 (black) shows a rather broad peak at this energy and at at 2226 keV but the G7 (red) shows a normal peak at 2352 and 2223 keV. Has anyone an explanation for this? The pulser is only in G7 and we see the sharp lines at 2667, 5120, and 6331 keV (pulser in 3 crystals).

Attachment 1: 161109_747576Ni-014-277keV.pdf
Attachment 2: 161109_747576Ni-014-613-619keV.pdf
Attachment 3: 161109_747576Ni-014-613-860keV.pdf
Attachment 4: 161109_747576Ni-014-2354keV.pdf

☐	99	Wed Nov 9 11:32:56 2016	Hoshino Suharu	PPAC calib from 375			382	747576Ni		F5Cwedge10mm F7empty F11empty

```
start
Run information
  Run name   : radiioff
  Run number : 382
  Run status : START
  Start date : 09-Nov-16 11:00:50
  Header     : PPAC calib., F5slit +70mm+-1mm

d03> stop
Ender : stop successfully
Run information
  Run name   : radiioff
  Run number : 382
  Run status : IDLE
  Start date : 09-Nov-16 11:00:50
  Stop  date : 09-Nov-16 11:03:21
  Header     : PPAC calib., F5slit +70mm+-1mm
  Ender      : stop successfully

Last event number
EFN Nickname   EVTN
 21 ccnet01    168847
 22 ccnet02    168847
 23 ccnet03    168847
 25 ccnet05    168847
 26 ccnet06    168847
 27 ccnet07    168847
 28 ccnet08    168847
 71 F3VME      168847
 82 sva02      168847
 83 sva03      168847
```

☐	98	Wed Nov 9 11:32:17 2016	Hoshino Suharu	PPAC calib from 375			381	747576Ni		F5Cwedge10mm F7empty F11empty

```
start
Run information
  Run name   : radiioff
  Run number : 381
  Run status : START
  Start date : 09-Nov-16 10:59:21
  Header     : PPAC calib., F5slit +80mm+-1mm

d03> stop
Ender : stop successfully
Run information
  Run name   : radiioff
  Run number : 381
  Run status : IDLE
  Start date : 09-Nov-16 10:59:21
  Stop  date : 09-Nov-16 11:00:01
  Header     : PPAC calib., F5slit +80mm+-1mm
  Ender      : stop successfully

Last event number
EFN Nickname   EVTN
 21 ccnet01    44602
 22 ccnet02    44602
 23 ccnet03    44602
 25 ccnet05    44602
 26 ccnet06    44602
 27 ccnet07    44602
 28 ccnet08    44602
 71 F3VME      44602
 82 sva02      44602
 83 sva03      44602
```

☐	97	Wed Nov 9 11:31:32 2016	Hoshino Suharu	PPAC calib from 375			380	747576Ni		F5Cwedge10mm F7empty F11empty

```
start
Run information
  Run name   : radiioff
  Run number : 380
  Run status : START
  Start date : 09-Nov-16 10:57:23
  Header     : PPAC calib., F5slit +50mm+-1mm

d03> stop
Ender : stop successfully
Run information
```

```
  Run name   : radiioff
  Run number : 380
  Run status : IDLE
  Start date : 09-Nov-16 10:57:23
  Stop  date : 09-Nov-16 10:57:59
  Header     : PPAC calib., F5slit +50mm+-1mm
  Ender      : stop successfully

Last event number
EFN Nickname   EVTN
 21 ccnet01    38293
 22 ccnet02    38293
 23 ccnet03    38293
 25 ccnet05    38293
 26 ccnet06    38293
 27 ccnet07    38293
 28 ccnet08    38293
 71 F3VME      38293
 82 sva02      38293
 83 sva03      38293
```

☐	96	Wed Nov 9 11:29:27 2016	Hoshino Suharu	PPAC calib from 375			379	747576Ni		F5Cwedge10mm F7empty F11empty

```
start
Run information
  Run name   : radiioff
  Run number : 379
  Run status : START
  Start date : 09-Nov-16 10:42:54
  Header     : PPAC calib., F5slit +19mm+-1mm

d03> stop
Ender : stop successfully
Run information
  Run name   : radiioff
  Run number : 379
  Run status : IDLE
  Start date : 09-Nov-16 10:42:54
  Stop  date : 09-Nov-16 10:43:58
  Header     : PPAC calib., F5slit +19mm+-1mm
  Ender      : stop successfully

Last event number
EFN Nickname   EVTN
 21 ccnet01    63152
 22 ccnet02    63152
 23 ccnet03    63152
 25 ccnet05    63152
 26 ccnet06    63152
 27 ccnet07    63152
 28 ccnet08    63152
 71 F3VME      63152
 82 sva02      63152
 83 sva03      63152
```

☐	95	Wed Nov 9 11:27:51 2016	Hoshino Suharu	PPAC calib from 375			378	747576Ni		F5Cwedge10mm F7empty F11empty

```
start
Run information
  Run name   : radiioff
  Run number : 378
  Run status : START
  Start date : 09-Nov-16 10:37:29
  Header     : PPAC calib., F5slit -50mm+-1mm

d03> stop
Ender : stop successfully
Run information
  Run name   : radiioff
  Run number : 378
  Run status : IDLE
  Start date : 09-Nov-16 10:37:29
  Stop  date : 09-Nov-16 10:41:01
  Header     : PPAC calib., F5slit -50mm+-1mm
  Ender      : stop successfully

Last event number
EFN Nickname   EVTN
 21 ccnet01    240605
 22 ccnet02    240605
 23 ccnet03    240605
 25 ccnet05    240605
 26 ccnet06    240605
 27 ccnet07    240605
 28 ccnet08    240605
 71 F3VME      240605
 82 sva02      240605
 83 sva03      240605
```

☐	94	Wed Nov 9 11:26:10 2016	Hoshino Suharu	PPAC calib from 375			377	747576Ni		F5Cwedge10mm F7empty F11empty

```
start
Run information
  Run name   : radiioff
  Run number : 377
  Run status : START
  Start date : 09-Nov-16 10:35:01
  Header     : PPAC calib., F5slit -19mm+-1mm L is negative

d03> stop
Ender : stop successfully
Run information
  Run name   : radiioff
  Run number : 377
  Run status : IDLE
  Start date : 09-Nov-16 10:35:01
  Stop  date : 09-Nov-16 10:36:35
  Header     : PPAC calib., F5slit -19mm+-1mm L is negative
  Ender      : stop successfully

Last event number
EFN Nickname   EVTN
 21 ccnet01    110498
 22 ccnet02    110498
 23 ccnet03    110498
 25 ccnet05    110498
 26 ccnet06    110498
 27 ccnet07    110498
 28 ccnet08    110498
 71 F3VME      110498
 82 sva02      110498
 83 sva03      1104
```

☐	93	Wed Nov 9 11:25:14 2016	Hoshino Suharu	PPAC calib from 375			376	747576Ni		F5Cwedge10mm F7empty F11empty

```
start
Run information
  Run name   : radiioff
  Run number : 376
  Run status : START
  Start date : 09-Nov-16 10:32:47
  Header     : PPAC calib., F5slit 0mm+-20mm

d03> stop
Ender : stop successfully
Run information
  Run name   : radiioff
  Run number : 376
  Run status : IDLE
  Start date : 09-Nov-16 10:32:47
  Stop  date : 09-Nov-16 10:33:43
  Header     : PPAC calib., F5slit 0mm+-20mm
  Ender      : stop successfully

Last event number
EFN Nickname   EVTN
 21 ccnet01    60951
 22 ccnet02    60951
 23 ccnet03    60951
 25 ccnet05    60951
 26 ccnet06    60951
 27 ccnet07    60951
 28 ccnet08    60951
 71 F3VME      60951
 82 sva02      60951
 83 sva03      60951
```

☐	92	Wed Nov 9 11:22:54 2016	Hoshino Suharu	PPAC calib from here			375	747576Ni		F5Cwedge10mm F7empty F11empty

```
start
Run information
  Run name   : radiioff
  Run number : 375
  Run status : START
  Start date : 09-Nov-16 10:30:45
  Header     : PPAC calib., F5slit 0mm +-1mm

d03> stop
Ender : stop successfully
Run information
  Run name   : radiioff
  Run number : 375
  Run status : IDLE
  Start date : 09-Nov-16 10:30:45
  Stop  date : 09-Nov-16 10:32:04
  Header     : PPAC calib., F5slit 0mm +-1mm
  Ender      : stop successfully

Last event number
EFN Nickname   EVTN
 21 ccnet01    88914
 22 ccnet02    88914
 23 ccnet03    88914
 25 ccnet05    88914
```

```
 26 ccnet06    88914
 27 ccnet07    88914
```

☐	91	Wed Nov 9 11:20:01 2016	Hoshino Suharu	measurement from here 747576Ni F5Cwedge10mm F7empty F11empty			374	747576Ni		F5Cwedge10mm F7empty F11empty

```
start
Run information
  Run name   : radiioff
  Run number : 374
  Run status : START
  Start date : 09-Nov-16 09:47:14
  Header     : 75Ni F5:C wedge 10mm F7:empty 10mm F11:C 6mm

d03> stop
Ender : stop successfully headerF11C6mm->F11empty
Run information
  Run name   : radiioff
  Run number : 374
  Run status : IDLE
  Start date : 09-Nov-16 09:47:14
  Stop  date : 09-Nov-16 10:25:26
  Header     : 75Ni F5:C wedge 10mm F7:empty 10mm F11:C 6mm
  Ender      : stop successfully headerF11C6mm->F11empty

Last event number
EFN Nickname   EVTN
 21 ccnet01    2490330
 22 ccnet02    2490330
 23 ccnet03    2490330
 25 ccnet05    2490330
 26 ccnet06    2490330
 27 ccnet07    2490330
 28 ccnet08    2490330
 71 F3VME      2490330
 82 sva02      2490330
 83 sva03      2490330
```

☐	90	Wed Nov 9 11:18:29 2016	Hoshino Suharu	measurement from 372 747576Ni F5Cwedge 10mm F7empty F11C plate 6mm			373	747576Ni		F5Cwedge 10mm F7empty F11C plate 6mm

```
start
Run information
  Run name   : radiioff
  Run number : 373
  Run status : START
  Start date : 09-Nov-16 09:09:26
  Header     : 75Ni F5:C wedge 10mm F7:empty 10mm F11:C 6mm

d03> stop
Ender : stop successfully
Run information
  Run name   : radiioff
  Run number : 373
  Run status : IDLE
  Start date : 09-Nov-16 09:09:26
  Stop  date : 09-Nov-16 09:45:57
  Header     : 75Ni F5:C wedge 10mm F7:empty 10mm F11:C 6mm
  Ender      : stop successfully

Last event number
EFN Nickname   EVTN
 21 ccnet01    2414705
 22 ccnet02    2414705
 23 ccnet03    2414705
 25 ccnet05    2414705
 26 ccnet06    2414705
 27 ccnet07    2414705
 28 ccnet08    2414705
 71 F3VME      2414705
 82 sva02      2414705
 83 sva03      2414705
```

☐	89	Wed Nov 9 11:16:44 2016	Hoshino Suharu	measurement from here 747576Ni F5Cwedge10mm F7empty F11C plate 6mm			372	747576Ni		F5Cwedge 10mm F7empty F11C plate 6mm

```
start
Run information
  Run name   : radiioff
  Run number : 372
  Run status : START
  Start date : 09-Nov-16 08:28:14
  Header     : 75Ni F5:C wedge 10mm F7:empty 10mm F11:C 6mm

d03> stop
Ender : stop successfully
Run information
  Run name   : radiioff
  Run number : 372
  Run status : IDLE
  Start date : 09-Nov-16 08:28:14
  Stop  date : 09-Nov-16 09:08:37
  Header     : 75Ni F5:C wedge 10mm F7:empty 10mm F11:C 6mm
```

```
  Ender      : stop successfully

Last event number
EFN Nickname   EVTN
 21 ccnet01    2826271
 22 ccnet02    2826271
 23 ccnet03    2826271
 25 ccnet05    2826271
 26 ccnet06    2826271
 27 ccnet07    2826271
 28 ccnet08    2826271
 71 F3VME      2826271
 82 sva02      2826271
 83 sva03      2826271
```

☐	88	Wed Nov 9 10:21:56 2016	Hoshino Suharu	measurement from 370 747576Ni F5Cwedge10mm F7empty F11empty			371	747576Ni		F5Cwedge10mm F7empty F11empty

```
start
Run information
  Run name   : radiioff
  Run number : 371
  Run status : START
  Start date : 09-Nov-16 07:38:22
  Header     : 75Ni F5:empty F7:CH2 10mm F11:C 6mm

d03> stop
Ender : stop successfully
Run information
  Run name   : radiioff
  Run number : 371
  Run status : IDLE
  Start date : 09-Nov-16 07:38:22
  Stop  date : 09-Nov-16 08:24:10
  Header     : 75Ni F5:empty F7:CH2 10mm F11:C 6mm
  Ender      : stop successfully

Last event number
EFN Nickname   EVTN
 21 ccnet01    3121442
 22 ccnet02    3121442
 23 ccnet03    3121442
 25 ccnet05    3121442
 26 ccnet06    3121442
 27 ccnet07    3121442
 28 ccnet08    3121442
 71 F3VME      3121442
 82 sva02      3121442
 83 sva03      3121442
```

☐	87	Wed Nov 9 10:07:02 2016	Hoshino Suharu	measurement from here 747576Ni F5empty F7CH2 plate 10mm F11empty			370	747576Ni		F5empty F7CH2 plate 10mm F11empty

```
start
Run information
  Run name   : radiioff
  Run number : 370
  Run status : START
  Start date : 09-Nov-16 07:14:56
  Header     : 75Ni F5:empty F7:CH2 10mm F11: empty

d03> stop
Ender : stop successfully
Run information
  Run name   : radiioff
  Run number : 370
  Run status : IDLE
  Start date : 09-Nov-16 07:14:56
  Stop  date : 09-Nov-16 07:36:35
  Header     : 75Ni F5:empty F7:CH2 10mm F11: empty
  Ender      : stop successfully

Last event number
EFN Nickname   EVTN
 21 ccnet01    1510384
 22 ccnet02    1510384
 23 ccnet03    1510384
 25 ccnet05    1510384
 26 ccnet06    1510384
 27 ccnet07    1510384
 28 ccnet08    1510384
 71 F3VME      1510384
 82 sva02      1510384
 83 sva03      1510384
```

☐	86	Wed Nov 9 09:53:07 2016	BRIKEN collaboration: Iris, Ale, Oscar	New run, no target at F11		BRIKEN		747576Ni		

```
Start 9:48
Stop 10:26

Setup:
- no Target @ F7 (but at F5)
- no target @ F11
```

BRIKEN:
-Run number: 014
-Root file: 161109_1026_747576Ni_014.root
-dlt: 161109_0948_747576Ni_013.dlt
-Conf: 161107

AIDA:
-Run: R13

Rates (Hz):
F11: ~1k
HPGe:
F11-BRIKEN:
BRIKEN:
VETO-T:
VETO-B:
AIDA:

☐	85	Wed Nov 9 09:47:17 2016	BRIKEN collaboration: Iris, Ale	BRIKEN: identified gamma lines		BRIKEN		747576Ni		

We have identified the following gamma-lines (after approx. 45min running) from the decays of 74,75,76Ni

74Ni into 74Cu:
There are 2 unplaced lines from the decay of 74Ni into 74Co at 166 keV and 694 keV. We see both of them in nice statistics! The 694 keV line is a doublet with a line at 698 keV. The 166 keV line could be also in 73Co (see ENSDF entry but this conclusion was rejected since the P1n value would then be 30% (much higher than calculated).

75Ni into 75Cu:
there is nothing in ENSDF, see A. Negret and B. Singh, Nucl. Data Sheet 114 (2013). There are two possible lines known 75Cu at 61.7 and 66.2 keV (possible spins 1/2- or 3/2-). We did not see these lines. The spin of 75Ni is 7/2+.

We see lines from the decay of 75Cu into 75Zn:
192.7 keV (I~50%)
420.5 keV (I=100%)
723.8 keV (I~71%)

See attached Mazzocchi PLB 2005 for isomeric decay of 76Ni:
We see the lines from the decay of the 8+ microsecond isomer, need to collect more statistics to see the 354 keV line (6+ to 4+ decay)

8+ -> 6+: ~144 keV (PLB: 144 keV); isomer with t1/2= 0.59 µs +18-11
6+ -> 4+: ? (PLB: 354 keV)
4+ -> 2+: ~928 keV (PLB: 930 keV)
2+ -> 0+: ~993 keV (PLB: 992 keV)

Info from ENSDF:

Eγ (keV)	Elevel (keV)	Iγ# (%)
144 2	2420	92 38
354 2	2276	54 25
930 2	1922	97 46
992 2	992	100 33

Attachment 1: Mazzochi-PLB2005.pdf

☐	84	Wed Nov 9 09:42:29 2016	Hoshino Suharu	747576Ni tuning F5empty F7CH2 plate 10mm F11empty			369	747576Ni		F5empty F7CH2 plate 10mm F11empty

start
Run information
  Run name   : radiioff
  Run number : 369
  Run status : START
  Start date : 09-Nov-16 07:04:45
  Header   : 75Ni F5:empty F7:CH2 10mm F11:C empty

d03> stop
Ender : this run was for ZDS tuning
Run information
  Run name   : radiioff
  Run number : 369
  Run status : IDLE
  Start date : 09-Nov-16 07:04:45
  Stop date : 09-Nov-16 07:14:11
  Header   : 75Ni F5:empty F7:CH2 10mm F11:C empty
  Ender   : this run was for ZDS tuning

Last event number

EFN	Nickname	EVTN
21	ccnet01	603170
22	ccnet02	603170
23	ccnet03	603170
25	ccnet05	603170
26	ccnet06	603170
27	ccnet07	603170
28	ccnet08	603170
71	F3VME	603170
82	sva02	603170
83	sva03	603170

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