



ISOLTRAP Control System status

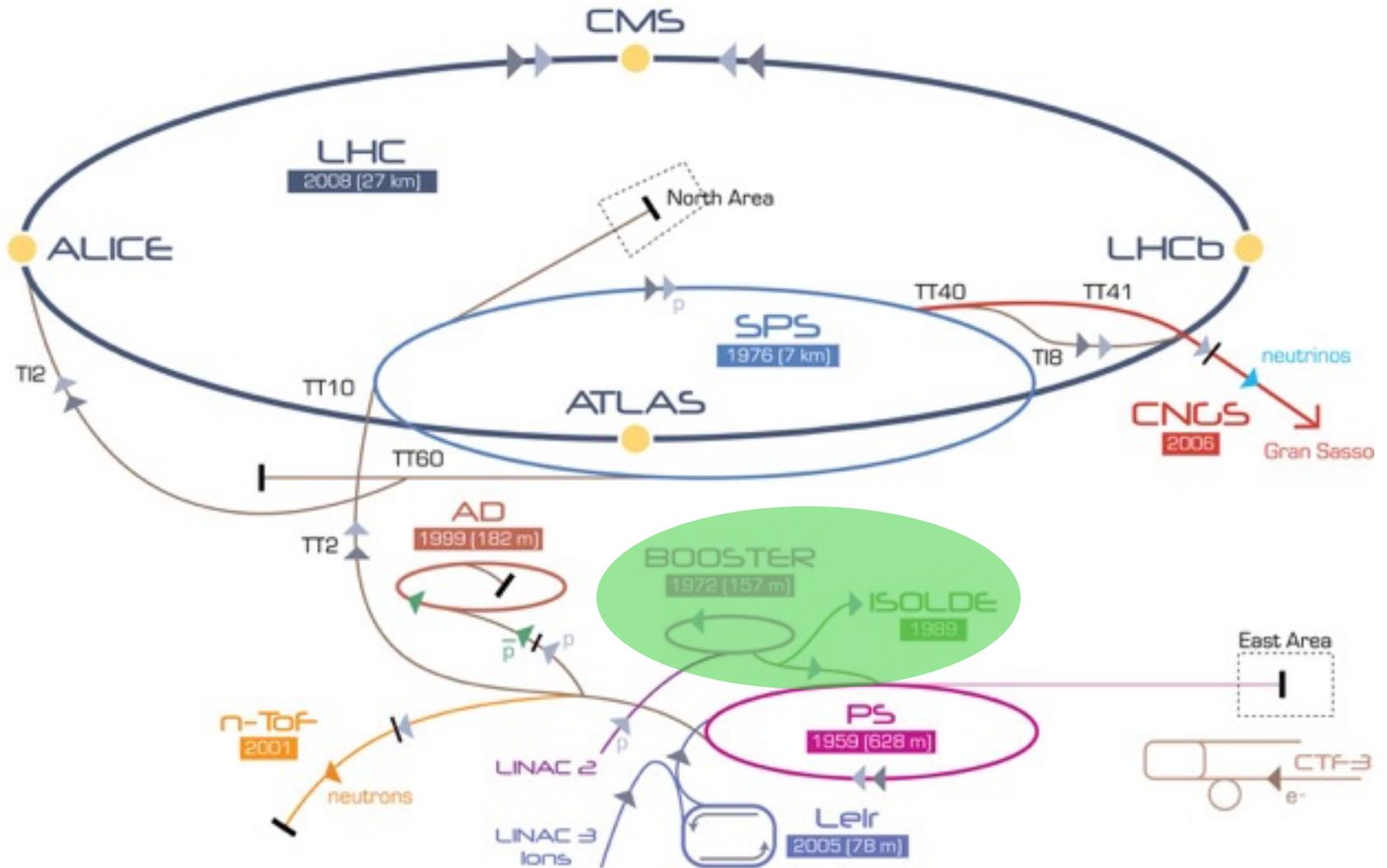
Maxime Mougeot

CSNSM, Orsay, France

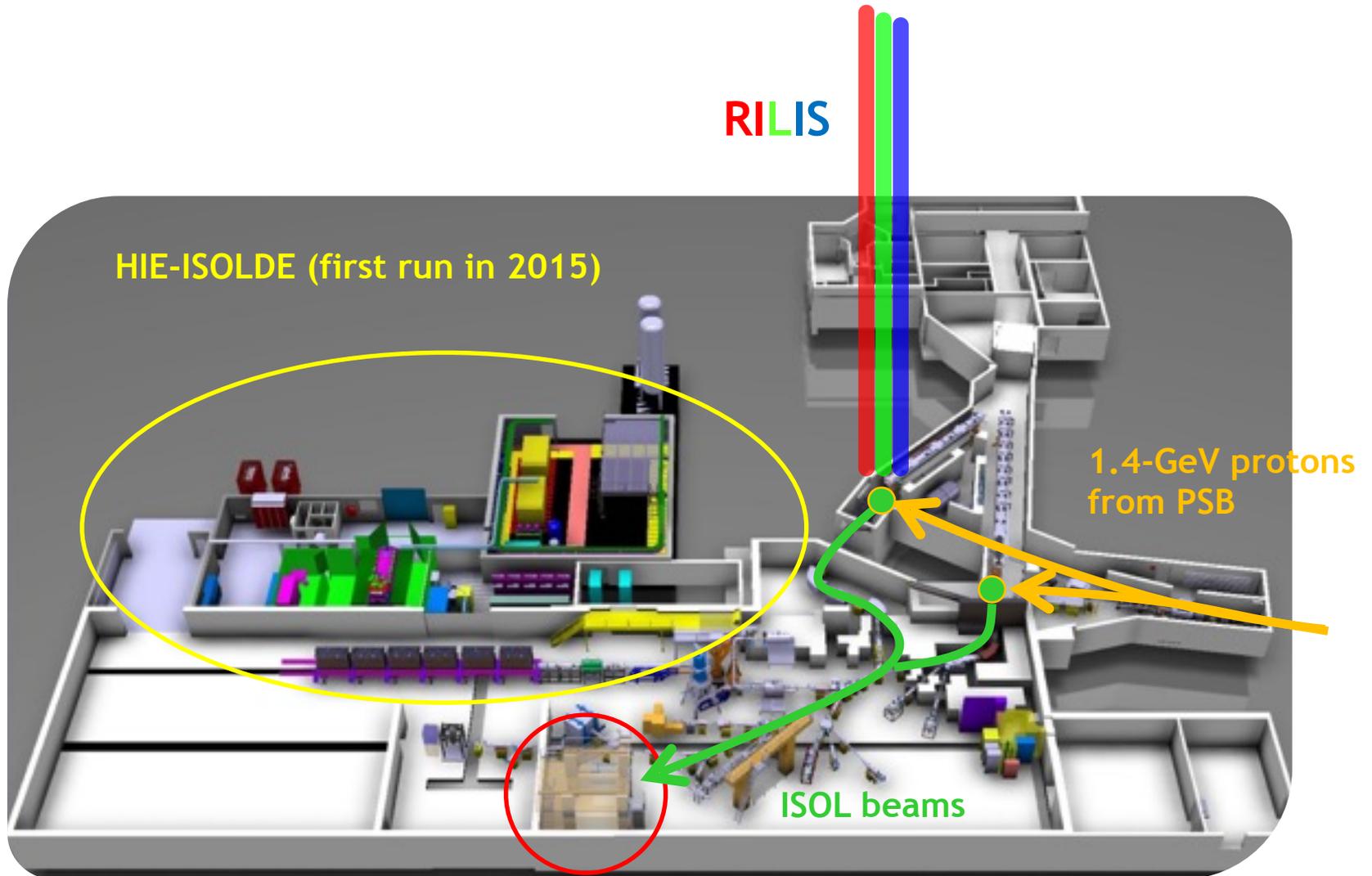
CS Workshop, GSI, 21-22 March, 2016

A small presentation of ISOLTRAP

ISOLTRAP@ISOLDE@CERN

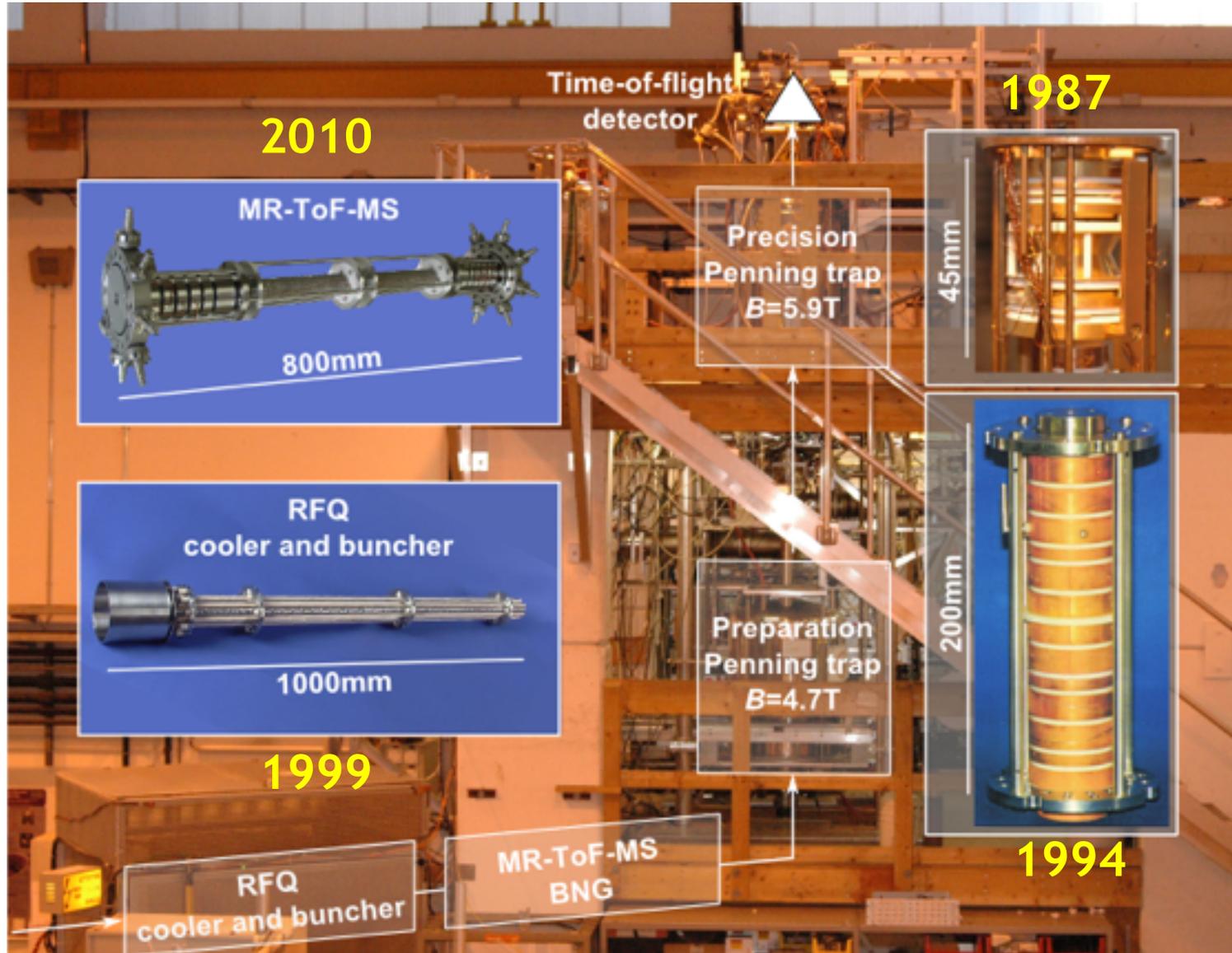


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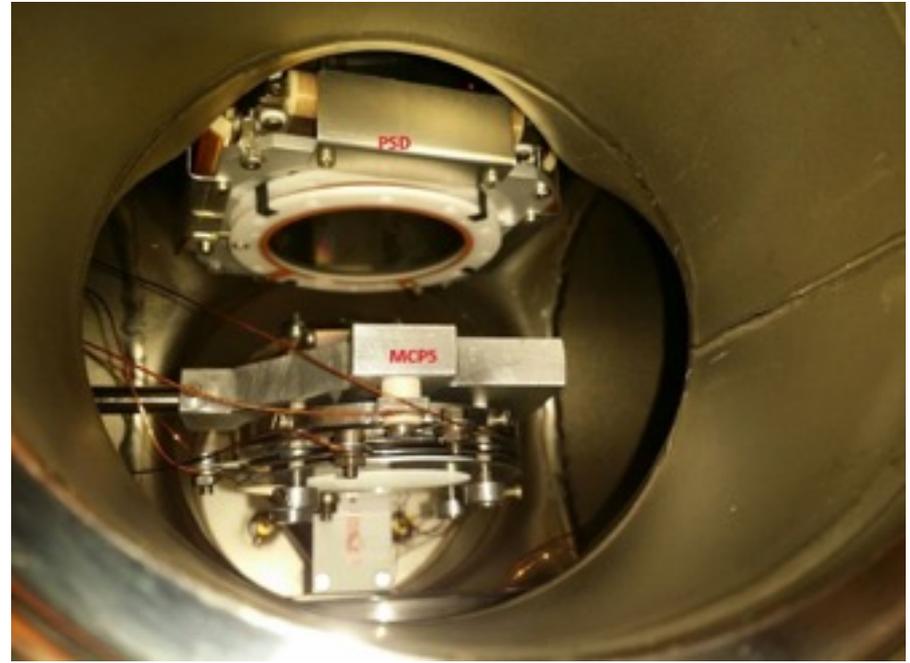
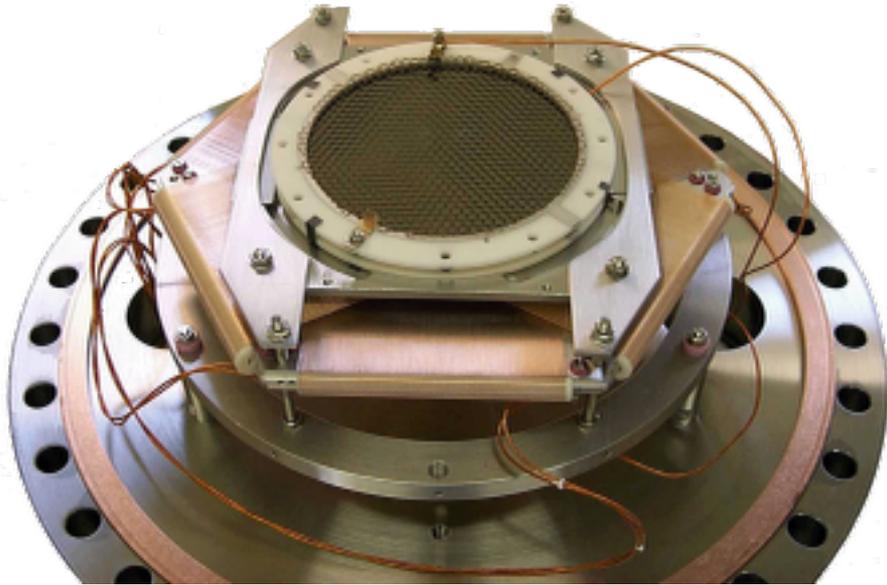


ISOLTRAP

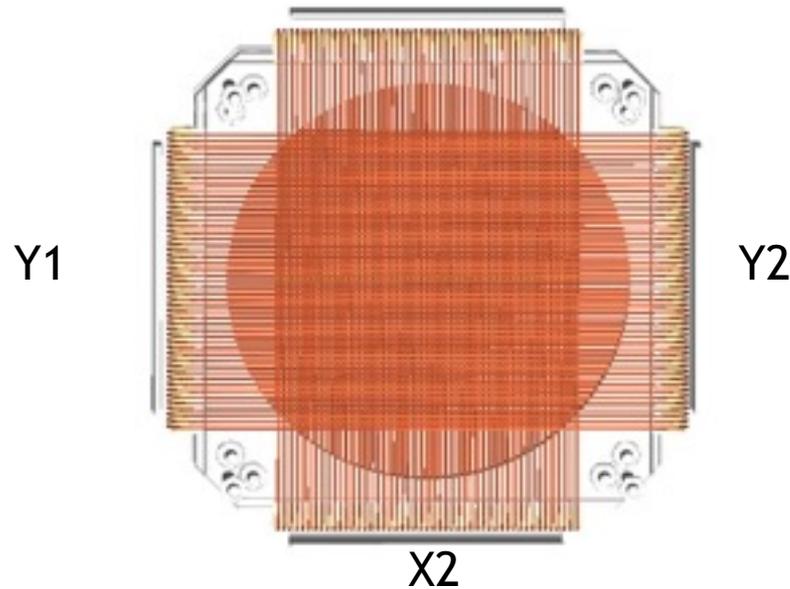
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PI-ICR detector for PI-ICR since 2015



X1



CS performances in 2015

CS performances in 2015

| IS run | Nuclides | # of Shifts | Hours | Problems |
|--------|----------|-------------|-------|----------------------|
| IS598 | Hg | 4 | 32 | None |
| IS534 | Au | 8 | 64 | None |
| IS535 | Cu | 11 | 88 | SVE subnormal |
| IS490 | Ar | 10.5 | 84 | SVE subnormal |
| IS513 | Po | 21.5 | 172 | None |
| IS473 | Tl | 8 | 64 | None |
| IS567 | Al/Mg | 18.5 | 148 | Freq.Gen. GPIB Crash |
| | | 81.5 | 652 | 3 Crahes (2-3 Hours) |

Overall performance : ran smoothly with only a few problems to mention

New in 2015/early2016

Hardware

- New PS for Z^2 Shim coils
- 2 Agilent freq. generators
- Moving towards a USB standard for Freq. Generators
- 5 Picoscopes for monitoring the Buncher coils (LabView drivers exist, USB standard)
- High precision ISEG PS (+WIENER MPOD crate) for MR-TOF and Buncher elements
- Regular ISEG PS for PI-ICR detector

Software

- MM8 and Eva source code received from R.Ringle
- Automatic switching for cross checks
- E-Log started (accessible only from CERN)
- PI-ICR LV software from M. Goncharov
- CSCClass for MPOD crate from Albert Vass (Greisswald)
- Fast MCA preliminary implemented:
 - As a CSCClass
 - In MM8

E-Log

ISOLTRAP
Electronic logbook of the ISOLTRAP experiment, Page 1 of 54
Logged in as "ISOLTRAP team" **ELOG**

List | New | Edit | Reply | Duplicate | Find | Config | Last day | Logout | Help

Full | Summary | Threaded | Hide attachments -- All entries -- -- Type -- 1061 Entries

Goto page 1, 2, 3 ... 52, 53, 54 Next

| ID | Date | Modified | Author | Context | Category | Type | Operation | Subject |
|------|-----------------------|----------|--------|----------|-----------|---------|-----------|-----------------------|
| 1062 | 1/12/2016 11:35:09 AM | yes | MM | Off-line | Equipment | Regular | none | New ISEG power supply |

ISOLTRAP
Electronic logbook of the ISOLTRAP experiment, Page 1 of 54

List | New | Edit | Reply | Duplicate | Find | Config | Last day | Logout | Help

Full | Summary | Threaded

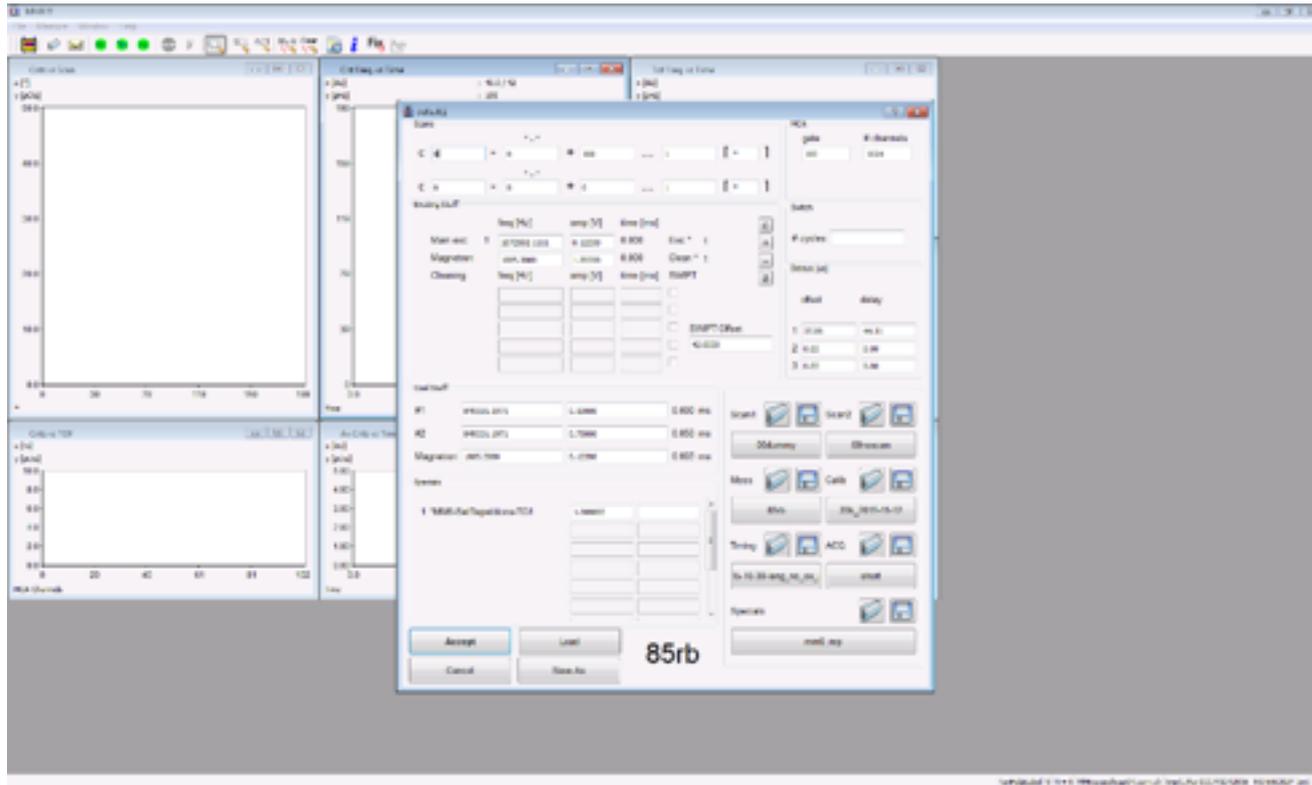
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| ID | Date | Modified | Author | Context | Category | Type | Operation | Subject |
|---------|------------------------|----------|-----------------|----------|-------------|---------|--------------------|-----------------------------------------------------------------|
| 1062 | 1/12/2016 11:35:09 AM | yes | MM | Off-line | Equipment | Regular | none | New ISEG power supply |
| 1061 | 1/4/2016 18:10:07 AM | no | DA | Off-line | Message | Regular | none | E-log crash |
| 1060 | 12/11/2015 2:25:53 PM | no | DA | Off-line | Message | Regular | none | e-log |
| Default | 12/11/2015 10:08:13 AM | no | MM, VM | Off-line | Equipment | Regular | none | setup shutdown for christmas break |
| 1058 | 12/8/2015 5:02:15 PM | no | FRW | Off-line | Equipment | Regular | none | Measure the voltages of the IBC, wires and of the PW-ToF cavity |
| 1057 | 12/7/2015 4:16:30 PM | no | VH, AW | Off-line | Equipment | Regular | none | Disac insulation vacuum |
| 1056 | 12/7/2015 3:24:30 PM | no | MM, VM | Off-line | Message | Regular | none | emittance meter measurement |
| 1055 | 12/7/2015 1:38:40 PM | no | VH, MM | Off-line | Equipment | Regular | none | Stop cryopump |
| 1054 | 12/2/2015 1:36:12 PM | no | AW | Off-line | Equipment | Regular | none | LT UT transfer problem |
| 1053 | 11/26/2015 6:37:12 PM | no | AW, DA, VH, FRW | On-line | Measurement | Regular | none | GPS emittance |
| 1052 | 11/26/2015 11:12:49 AM | yes | FRW, VH, DA, AW | On-line | Measurement | Regular | none | ESOLDE beam emittance measurements |
| 1051 | 11/27/2015 8:05:58 PM | yes | VH, DA | On-line | Measurement | Regular | none | ESOLDE beam emittance measurement |
| 1050 | 11/27/2015 3:11:49 PM | yes | AW | Off-line | Equipment | Regular | Position sensitive | Conversion of the PS-BCR motions |

Developed at PSI by Stefan Ritt since 2001
Open source with GNU GPL

- Simple and User friendly
- Adding entries, photos, hyperlinks
- Automatic timestamps
- Sections

MM8 and automatic switching



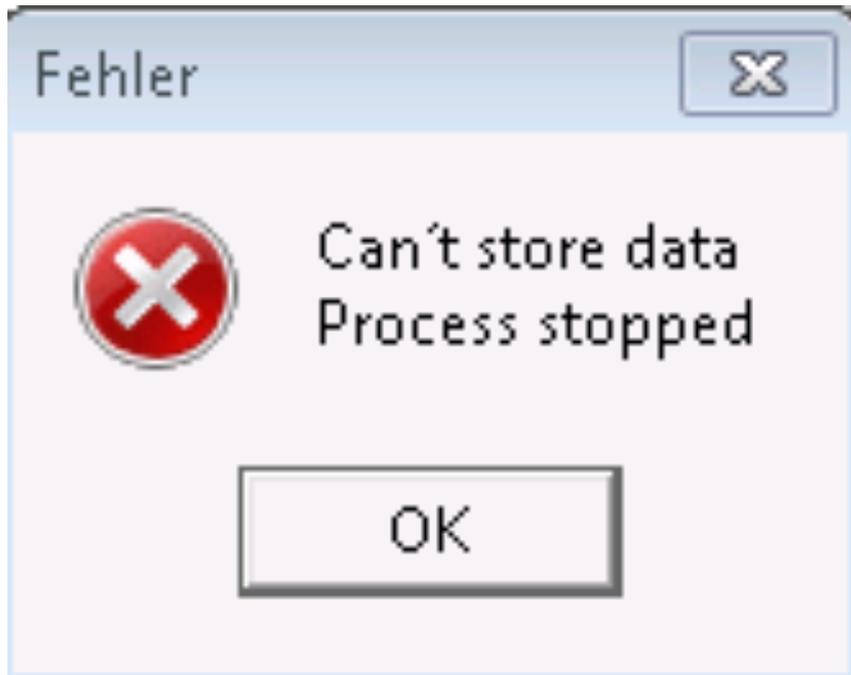
MM8:

- Adapted source code + recompiled
- Run on a new PC
- MM6 crash but no MM8 crash
- Run smoothly (crash if copy/paste)

Fast switching:

- Python script
- Simple configuration by a file
- Send config by LV registered in DIM
- Already works with MM8

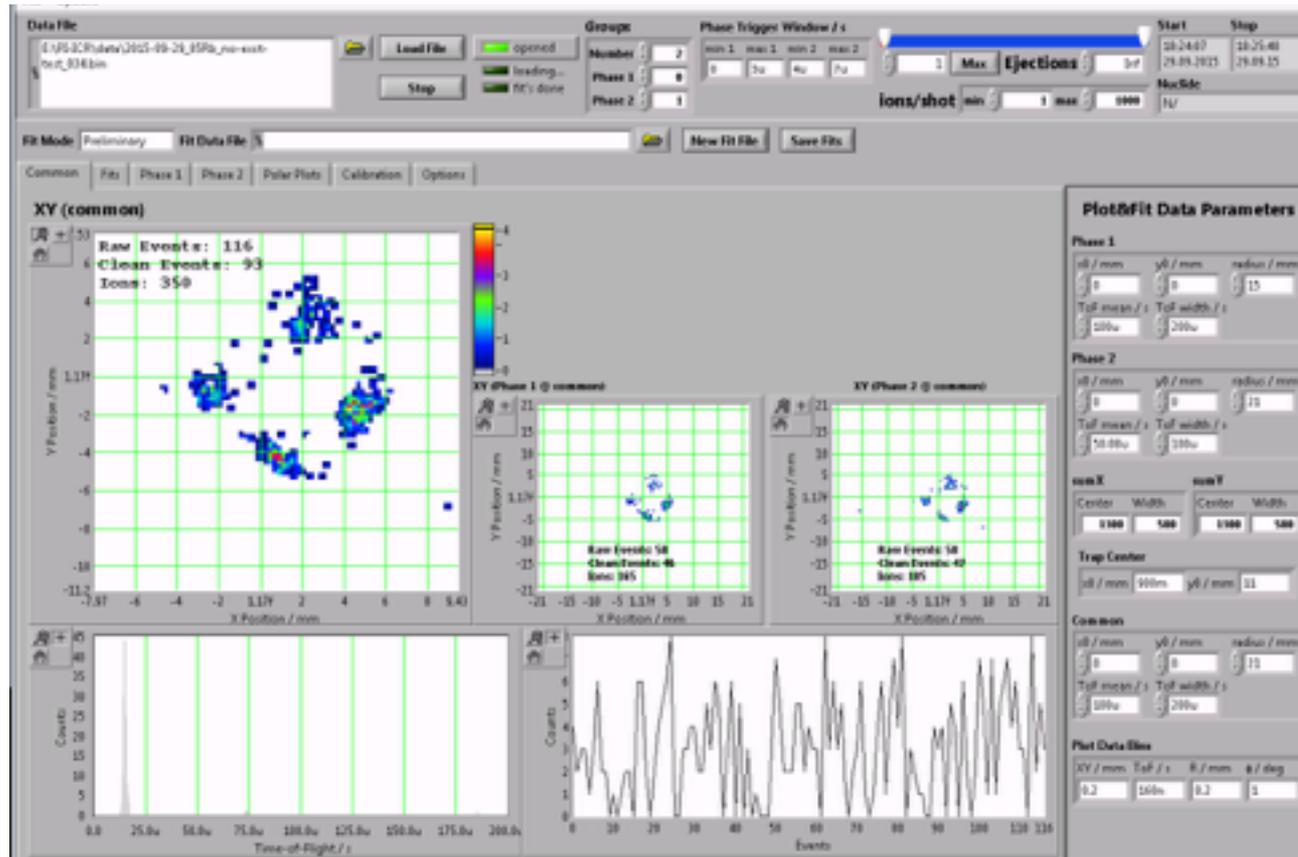
MM6 Crash



- Happened from time to time on the old PC
- Happened very frequently on PCISOLTRAP32
- No errors with MM8

PI-ICR LabView Software

- Stand alone LabView interface
- One application for data acquisition
- One for on-line visualisation and analysis

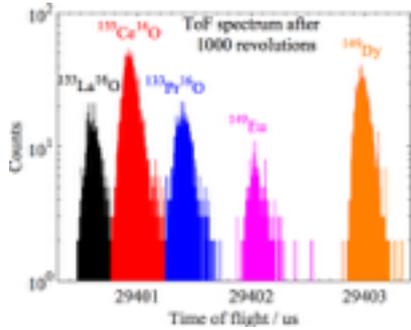


Concerning the future of ISOLTRAP CS

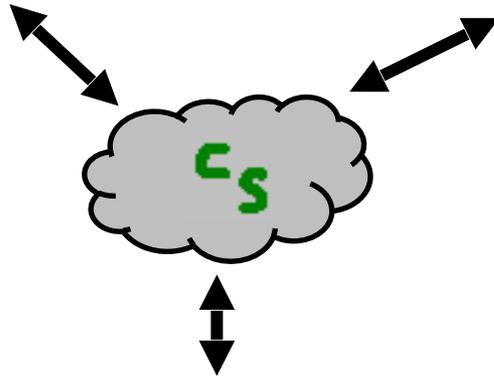
Future developments

- Minor CSGlobal developments :
 - Regular ISEG PS for PI-ICR detector (at a very early stage)
 - Picoscope class for monitoring the Buncher coils (not started yet)
- Development of a class for the Fast MCA :
 - A major concern at the moment
 - Can already handle 1D spectrum
 - Problem : many files are created in the process
 - Requires to **re-think the logic** of the Event Builder and of LV MM6

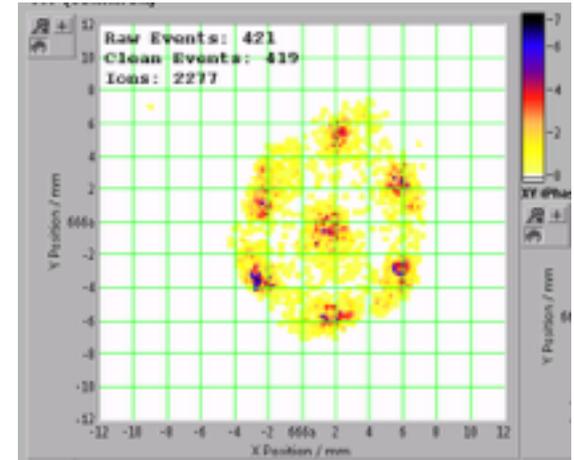
The challenge for the CS



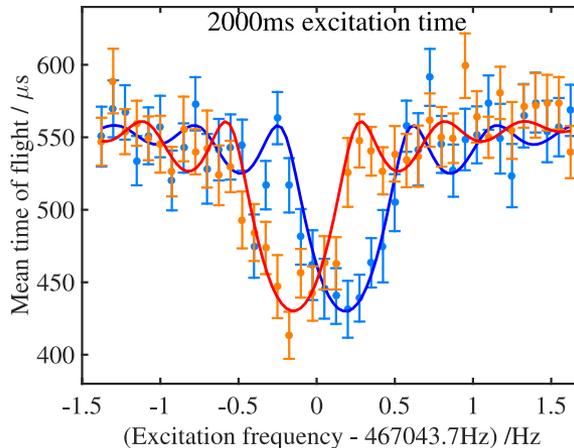
MR-TOF MS



PI-ICR



TOF-ICR



A few questions :

- Fast MCA :
 - Will MM9 enable the visualisation of 2D data ?
- PI-ICR software :
 - Merge into MM8 ?
 - Change the data format and save as tmp ?

A more radical change ?

- Simple and flexible stand alone LabView interface for Timing Patterns selection
- Stand alone LabView application for on-line data visualisation : merge MM8, MCDWIN, PI-ICR in a single LabView interface
- Motivations :
 - In reality we use MM8 only for Timing Patterns selection
 - Simpler to modify/maintain by the end user

Thank you !