

Experiments on lifetime and mass measurements with FRS-ESR

Yuri A. Litvinov

FRS User Meeting
GSI, Darmstadt, 29 October 2009

**Max-Planck-Institut
für Kernphysik, Heidelberg**



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... to be continued by Ronja Knöbel after lunch

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Experimental Proposals

E048 + E055

E048: “Exploring Long-Living K-Isomers via Schottky-Mass-Spectrometry at the ESR”

Spokesperson: P.M. Walker, Uni. Surrey, U.K.

GSI Contact Person: Yu.A. Litvinov, GSI

Year of Approval: 1999

Shifts: approved 27(0) / left 0(0)

E055: “Experimental program for direct mass measurements at FRS-ESR ...”

Spokesperson: C. Scheidenberger, GSI

GSI Contact Person: Yu.A. Litvinov, GSI

Year of Approval: 2002

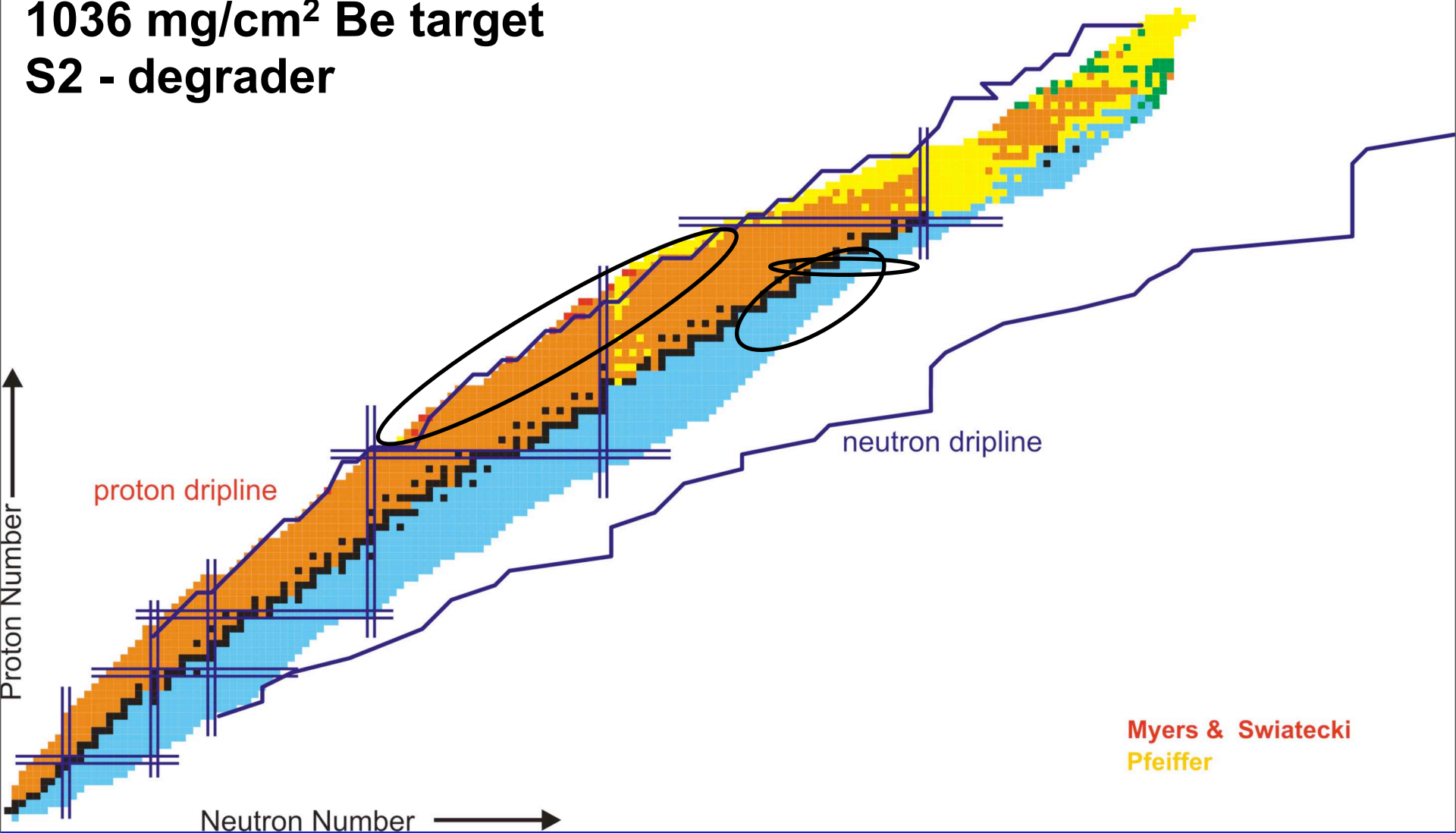
Shifts: approved ~90(0) / left 0(0)

Experiment E048+E055 (23.03-31.03.2009)

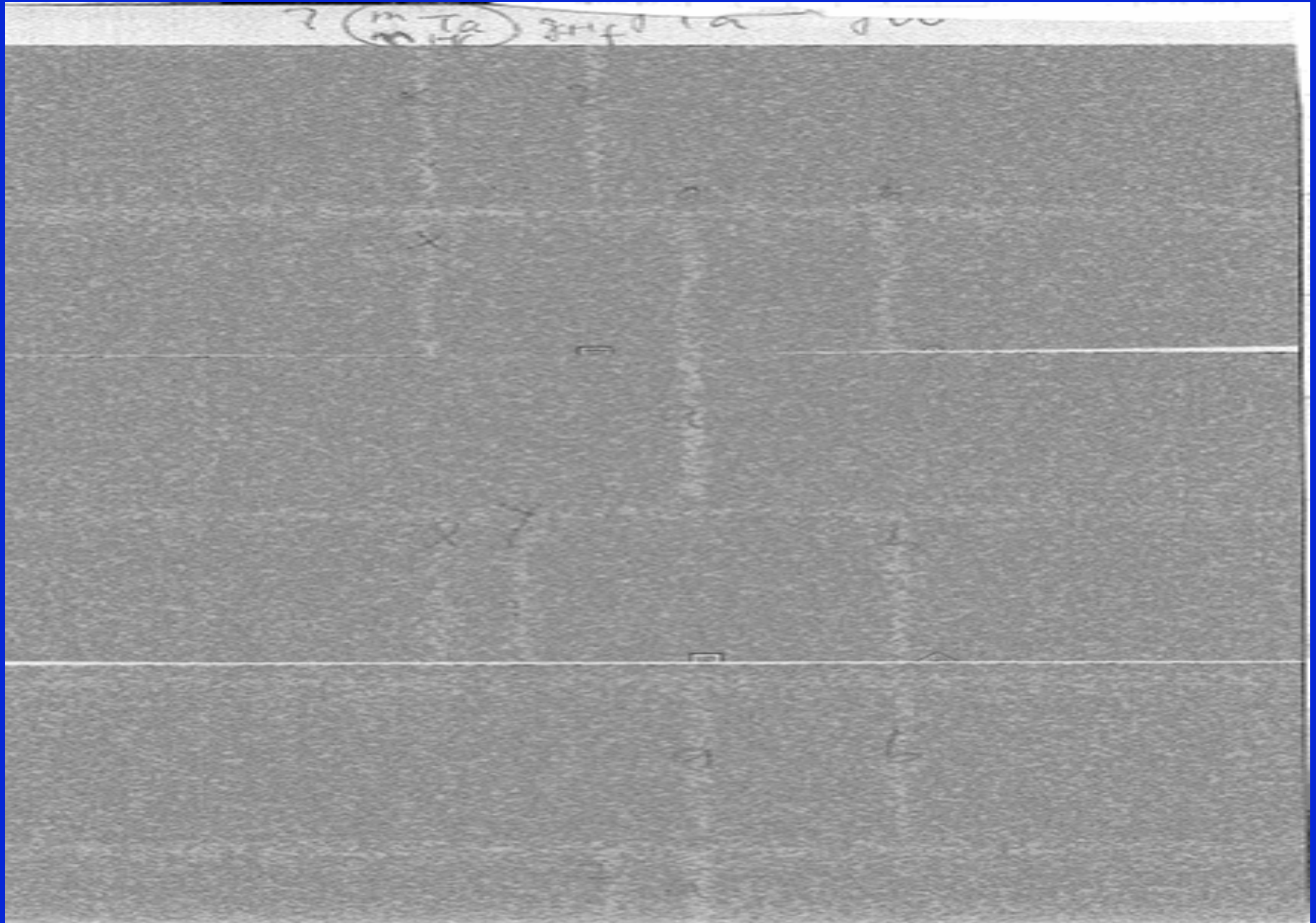
^{197}Au primary beam $1\text{-}2 \cdot 10^9$

1036 mg/cm^2 Be target

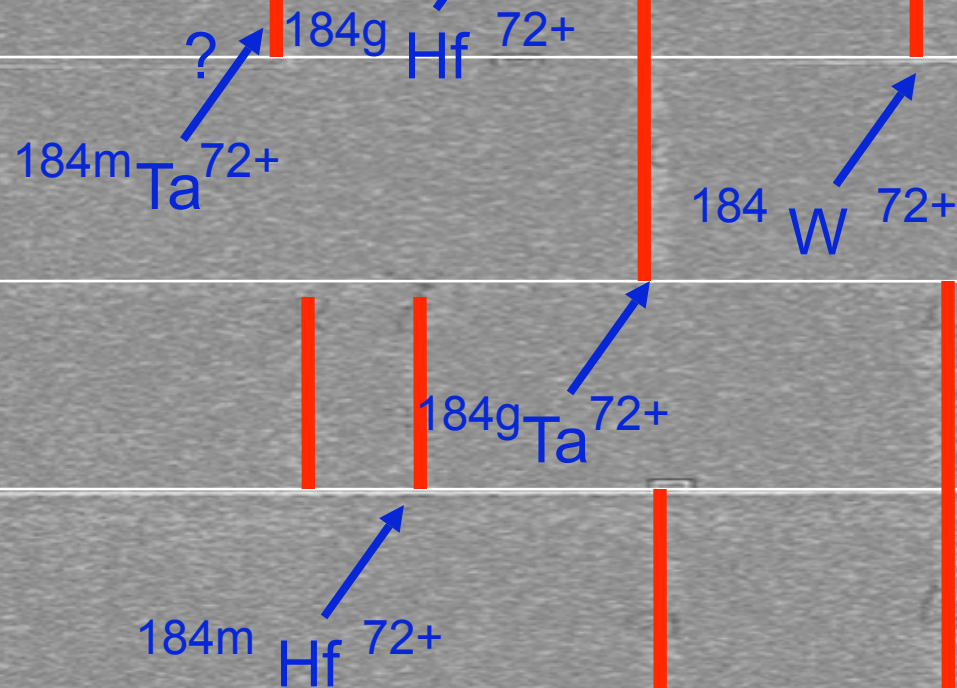
S2 - degrader



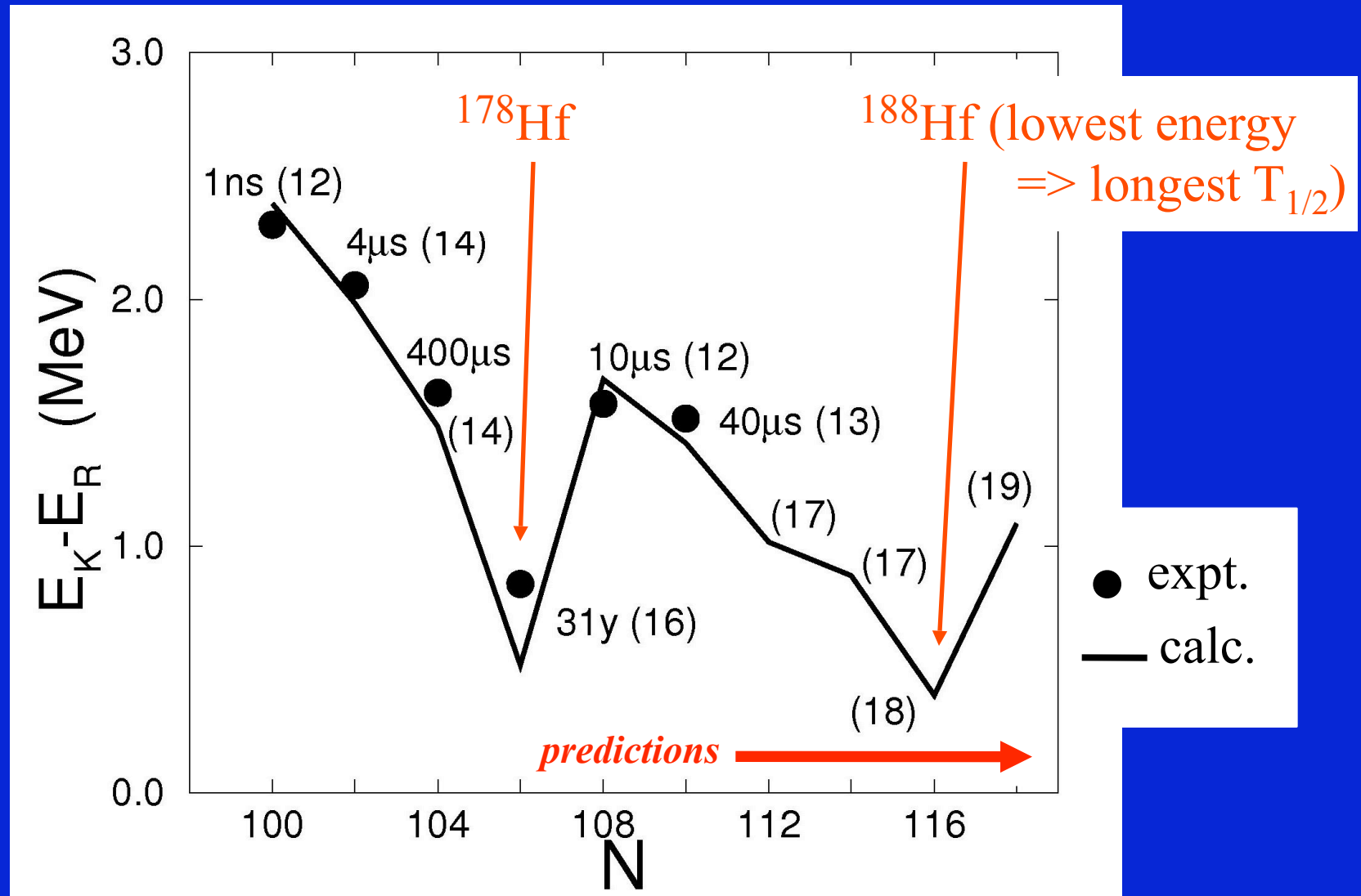
Experiment E048+E055 (23.03-31.03.2009)



Experiment E048+E055 (23.03-31.03.2009)



Search for ^{188}Hf 4-quasiparticle isomer (new proposal)



Experimental Proposals

E077 + E082

E077 & E082: “Single-Ion Spectroscopy of Two-Body Beta-Decays”

Spokesperson: Yu.A. Litvinov, GSI, F. Bosch, GSI

GSI Contact Person: ----

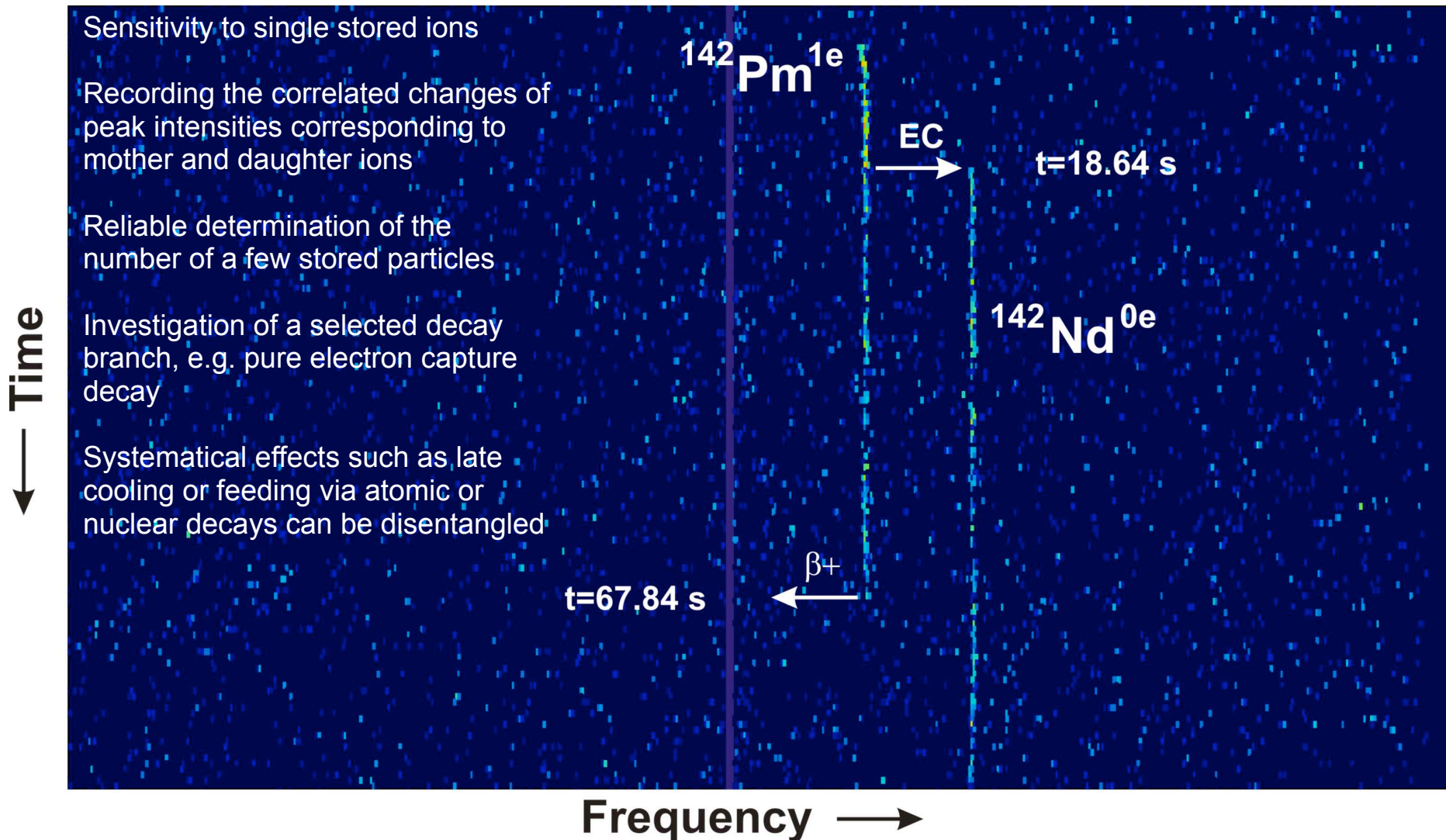
Year of Approval: 2006

Shifts: approved 75(0) + 100(0) / left 62(0)

Requested all 62 shifts for 2010

Experiment E077+E082

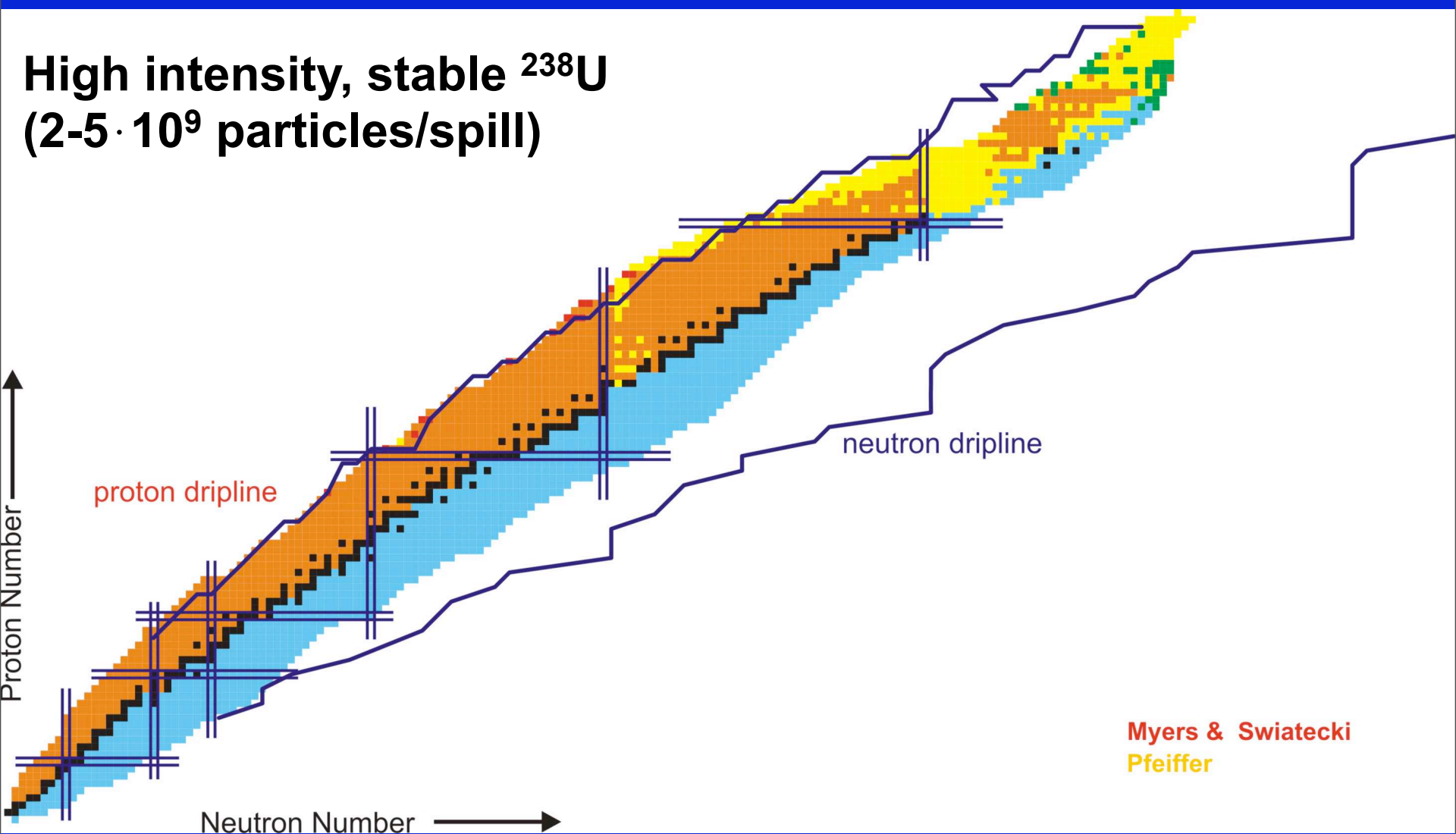
Primary task: EC decay of He-like ^{142}Pm



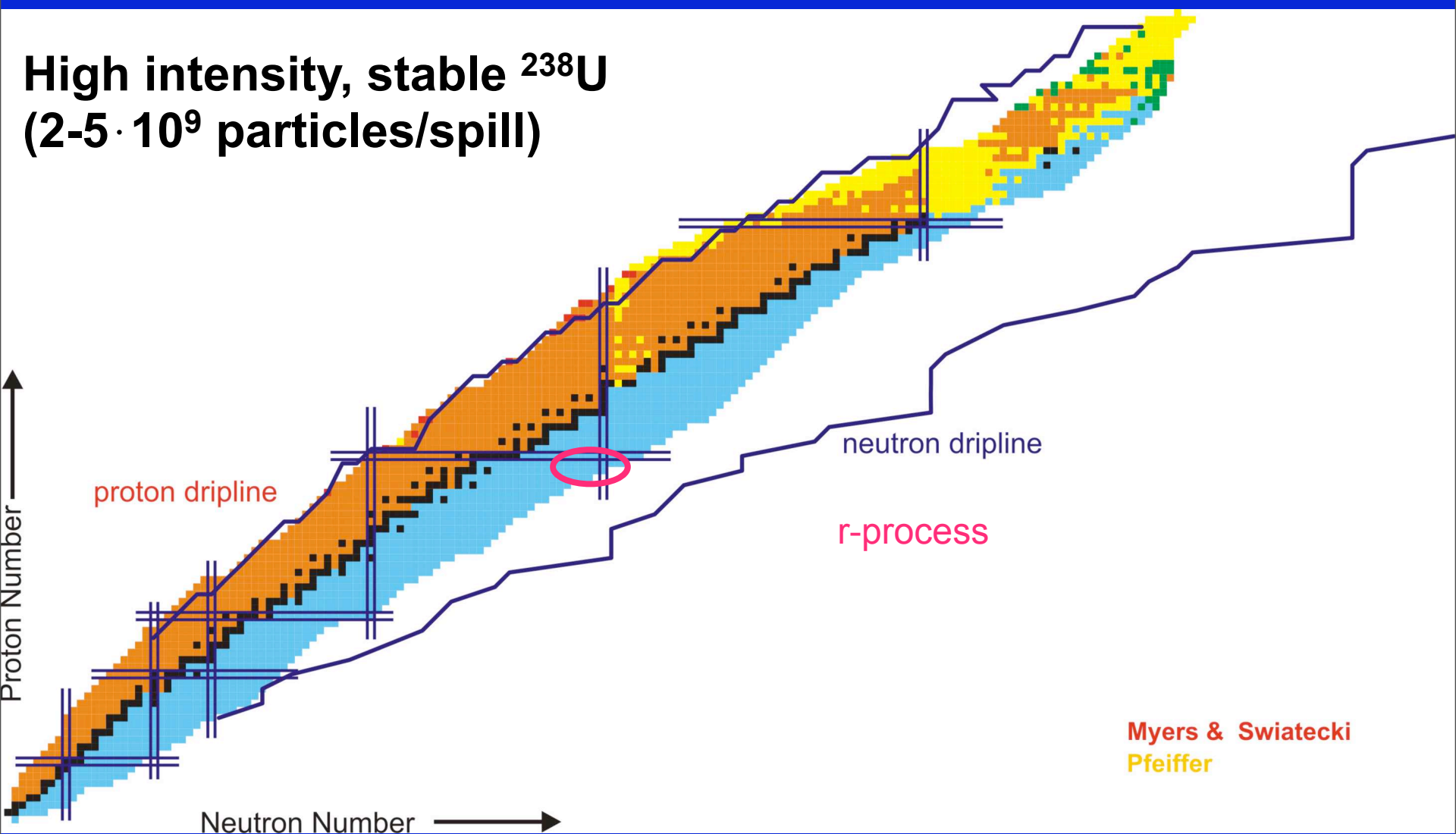
Setup

- FRS focal planes equipment
Vacuum, CG, Target, S2-disc (731 mg/cm² Al)
- Is there any new or non-standard equipment required?
FRS-No, ESR-New Schottky Pick-Ups
- Is there a modification or a new DAQ required?
No
- What is the requested primary beam and intensity?
E077+E082: ^{152}Sm , $5 \cdot 10^8$ particles/spill
- How many shifts are requested for 2010?
E077+E082 = 62 shifts

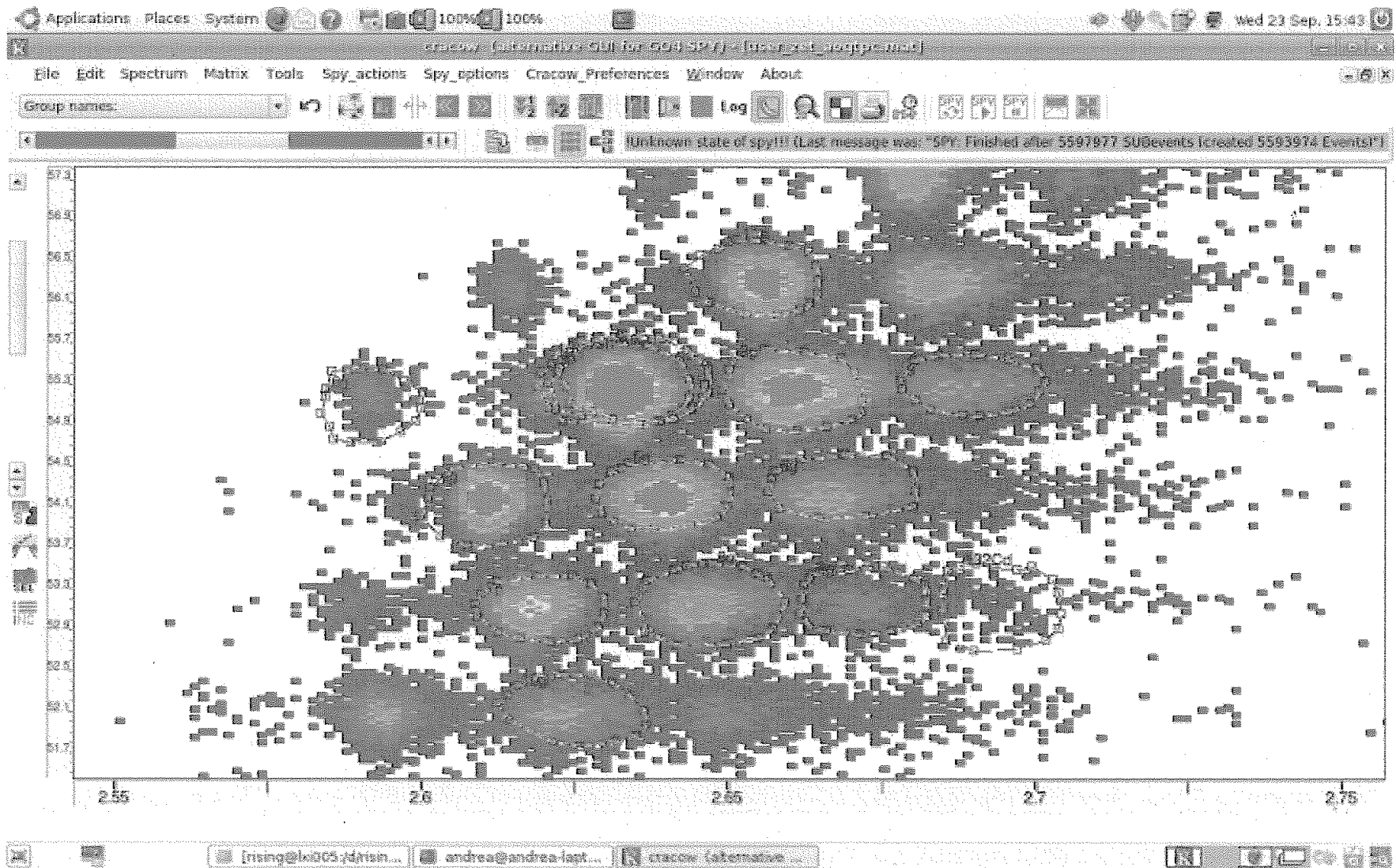
Masses of $^{129-132}\text{Cd}$ (new proposal)



Masses of $^{129-132}\text{Cd}$ (new proposal)



Masses of $^{129-132}\text{Cd}$ (new proposal)



Masses of $^{129-132}\text{Cd}$ (new proposal)

