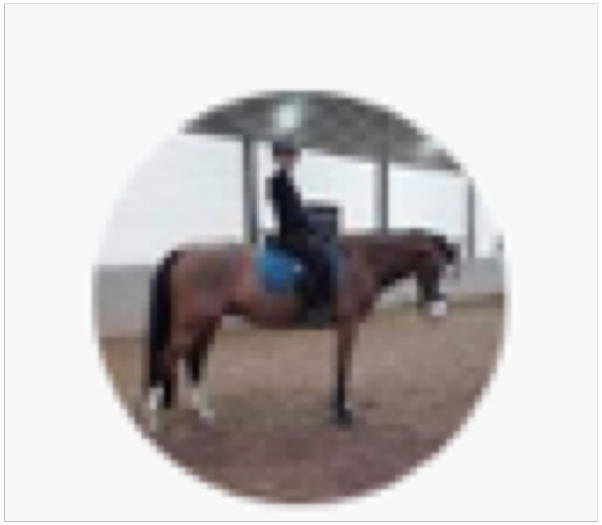
H037



Sunrise 4G 07:01 100%

Willemijn Colijn

volgensmij 16:15

Morgen. 16:16

Hier ben ik nu 16:16

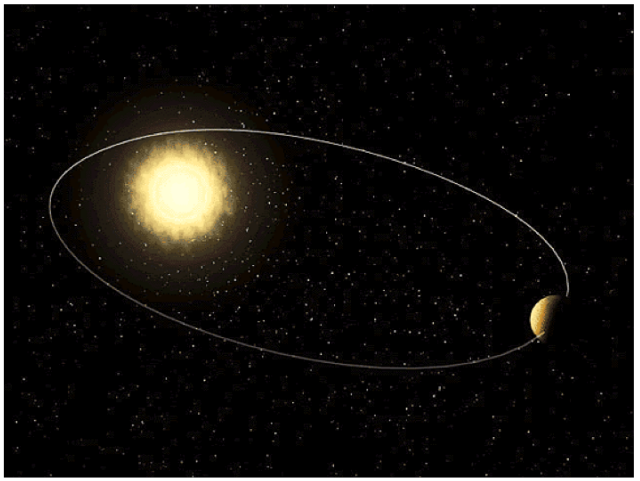
👍 😄 16:16

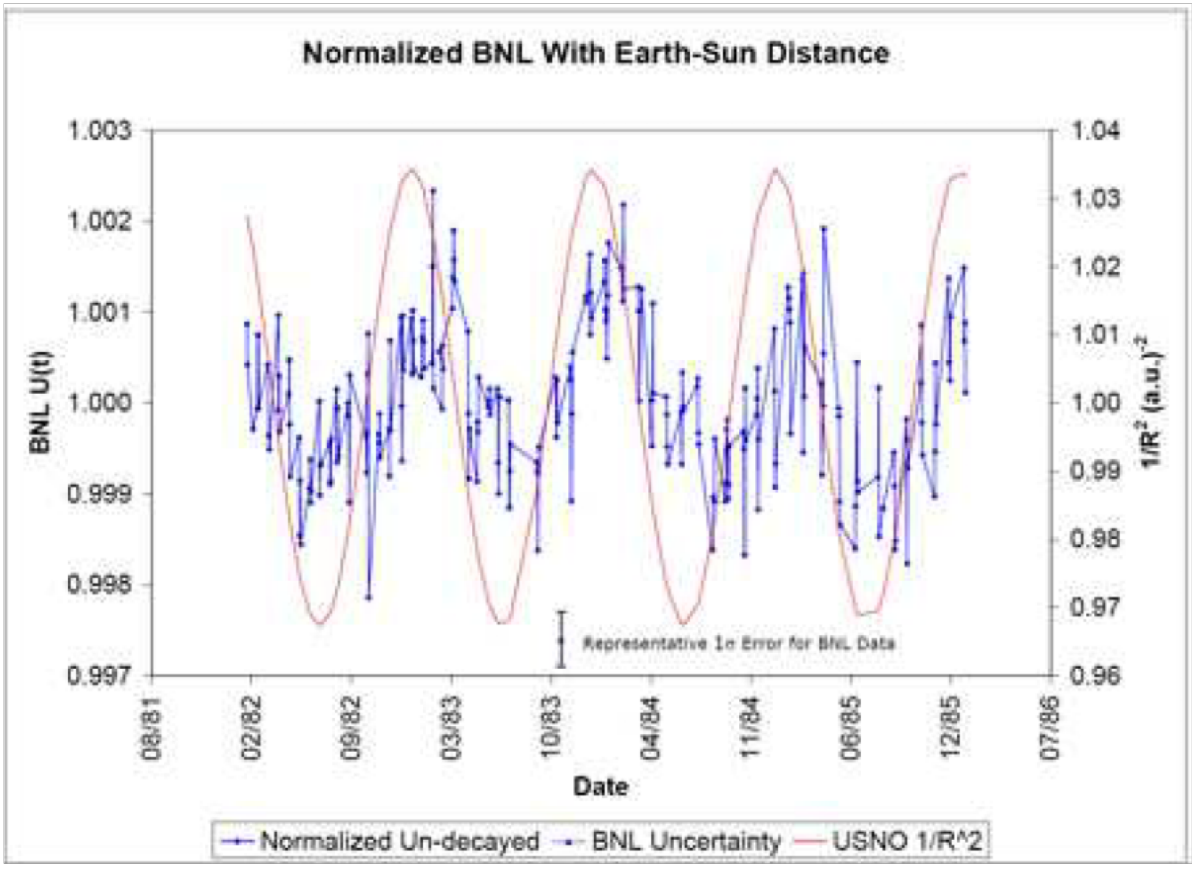
saai? 16:16

Modulation

Modulation

Jenkins & Fishbach claims





Modulation

Journal of Instrumentation

A precision experiment to investigate long-lived radioactive decays

J.R. Angevaare[a], P. Barrow[b], L. Baudis[b], P.A. Breur[a], A. Brown[b], A.P. Colijn[a], G. Cox[c], M. Gienal[b], F. Gjaltema[a], A. Helmling-Cornell[c], M. Jones[c], A. Kish[b], M. Kurz[c], T. Kubley[d], R.F. Lang[c], A. Massafferri[e], R. Perci[e], C. Reuter[c], D. Schenk[a], M. Schumann[f] and S. Towers[g] — Hide full author list

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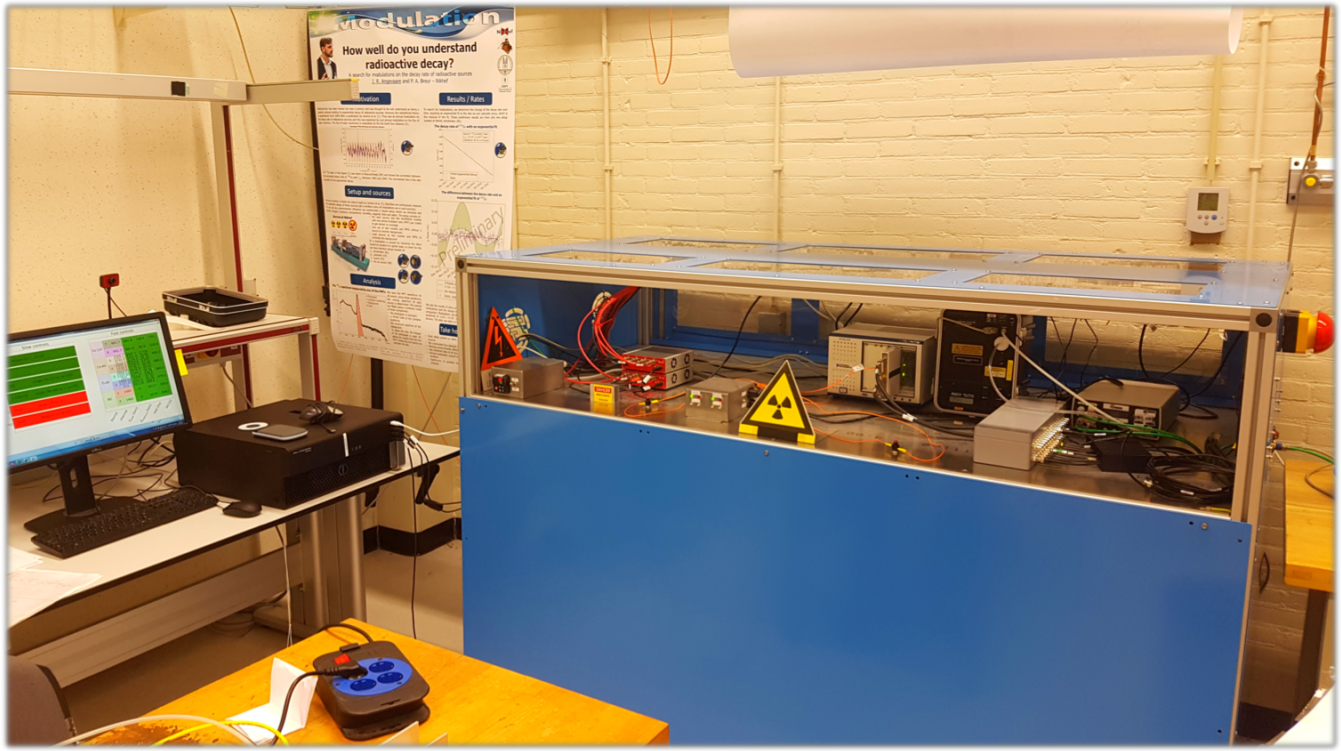
Journal of Instrumentation, Volume 13, July 2018

Article PDF



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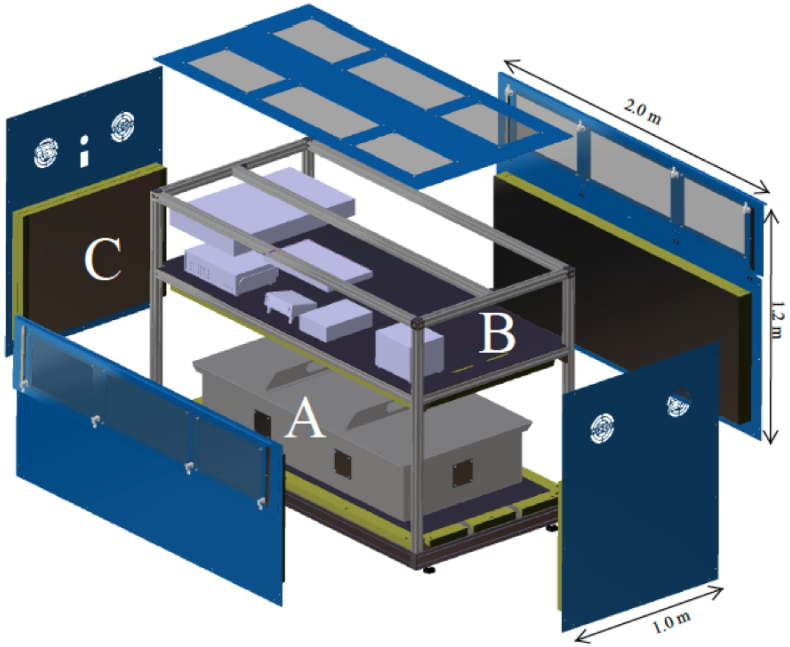
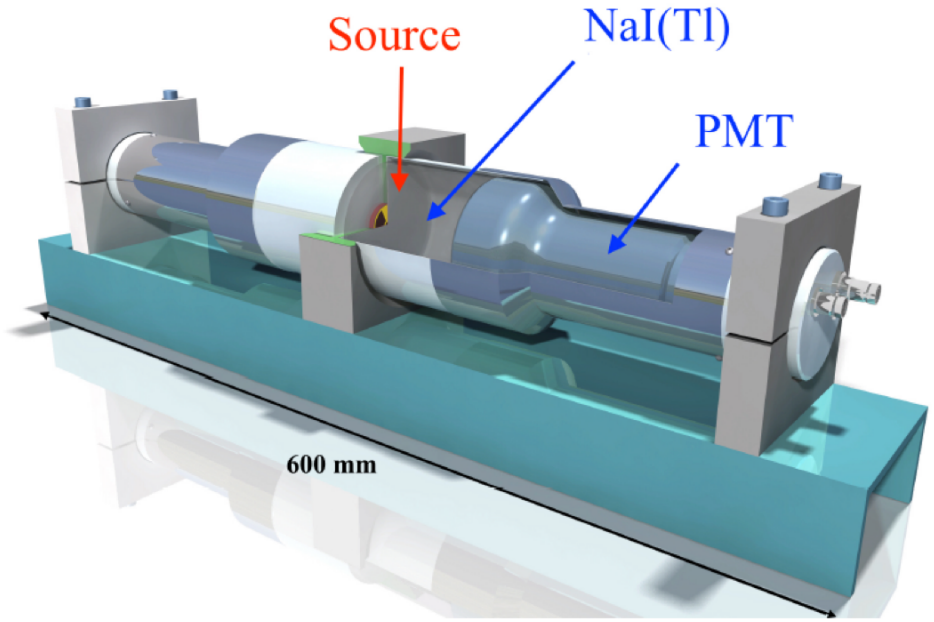


(a)



(b)

Modulation

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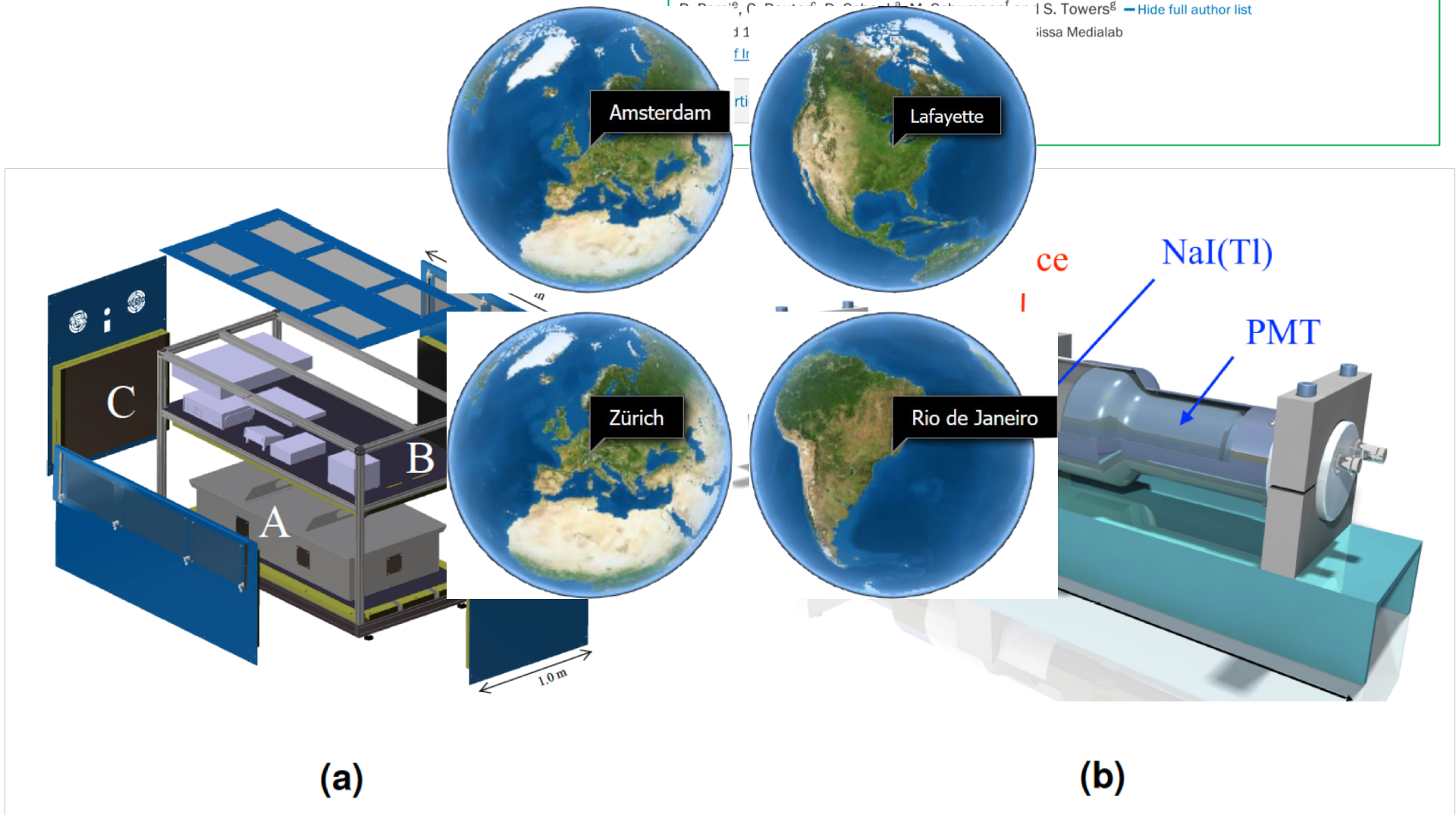
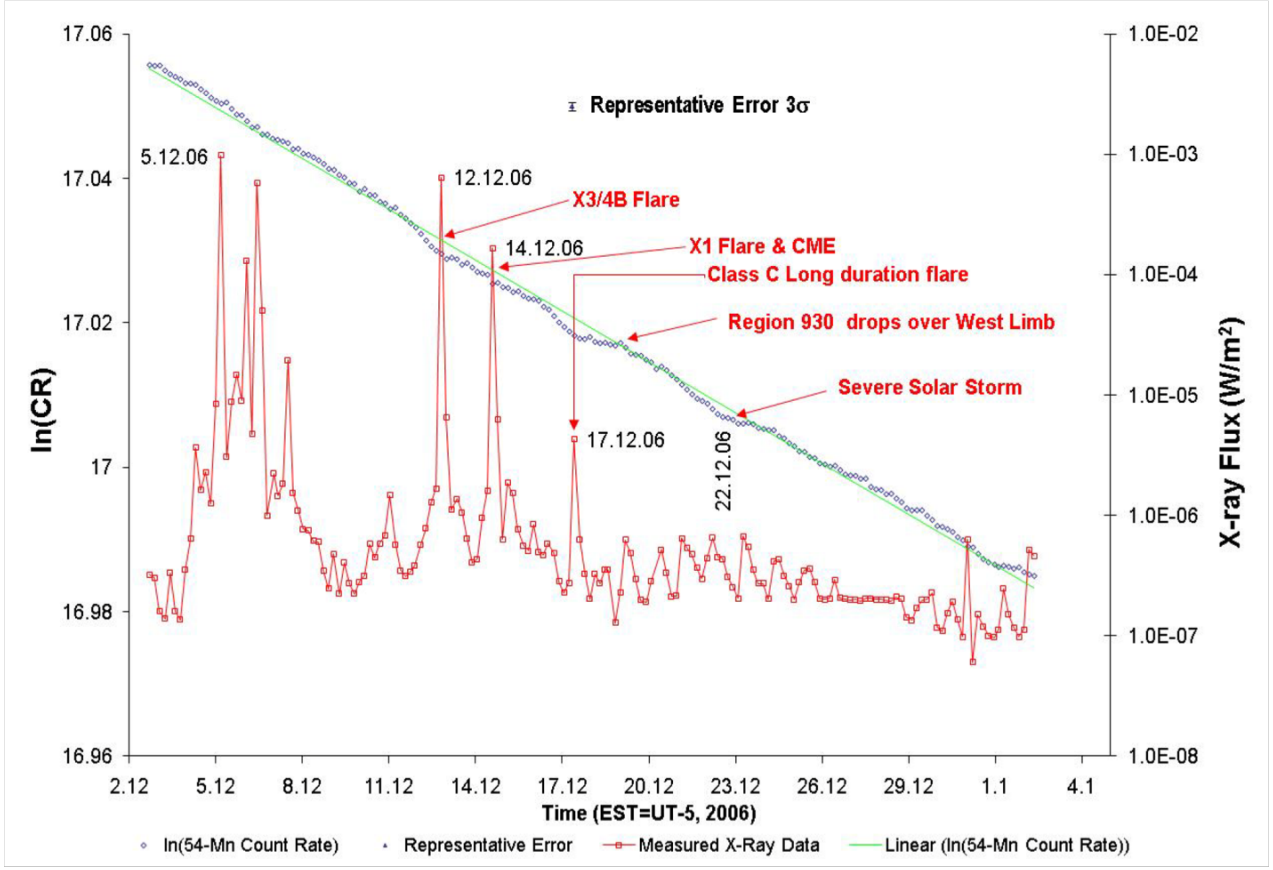


Moduation

Another claim of the same dudes



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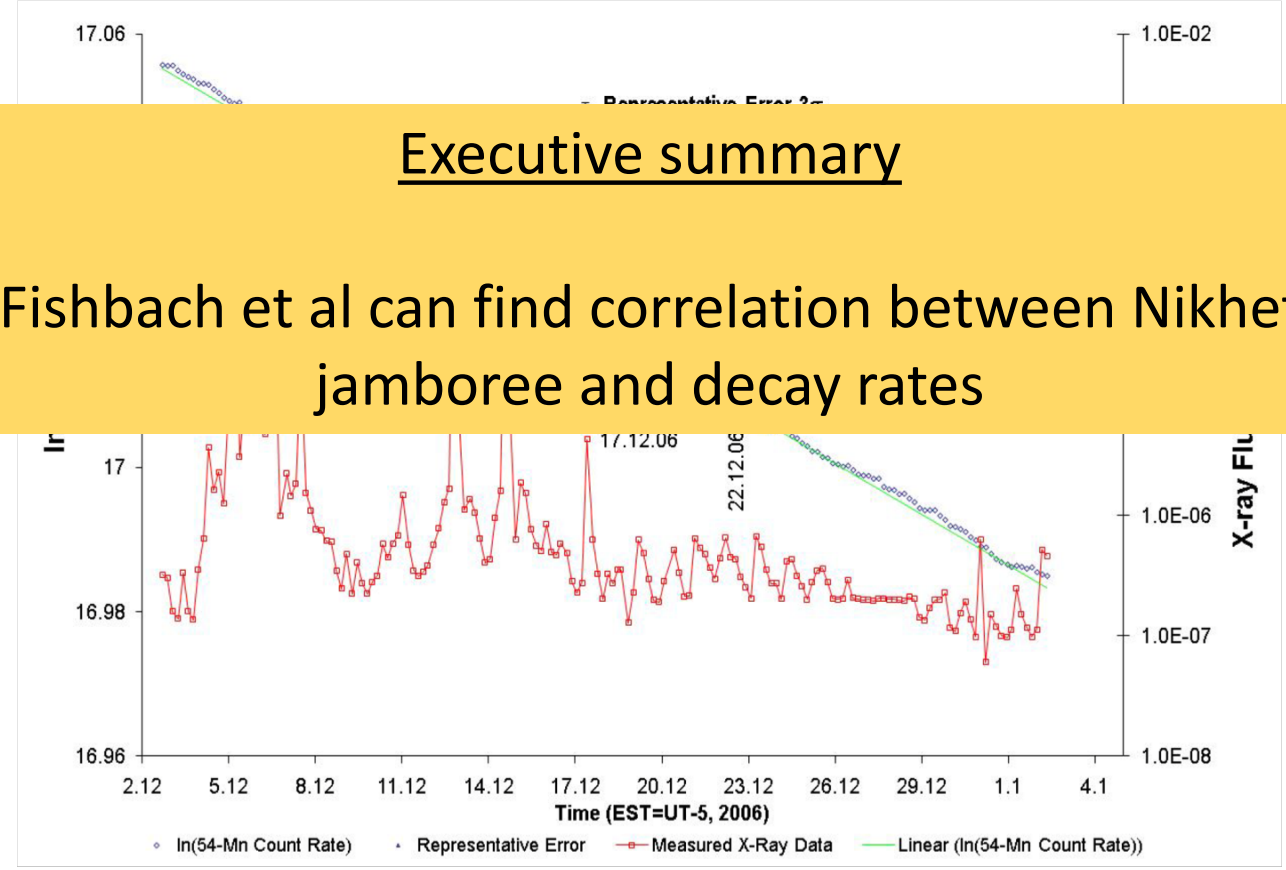


Executive summary

Fishbach et al can find correlation between Nikhef jamboree and decay rates

Modulation

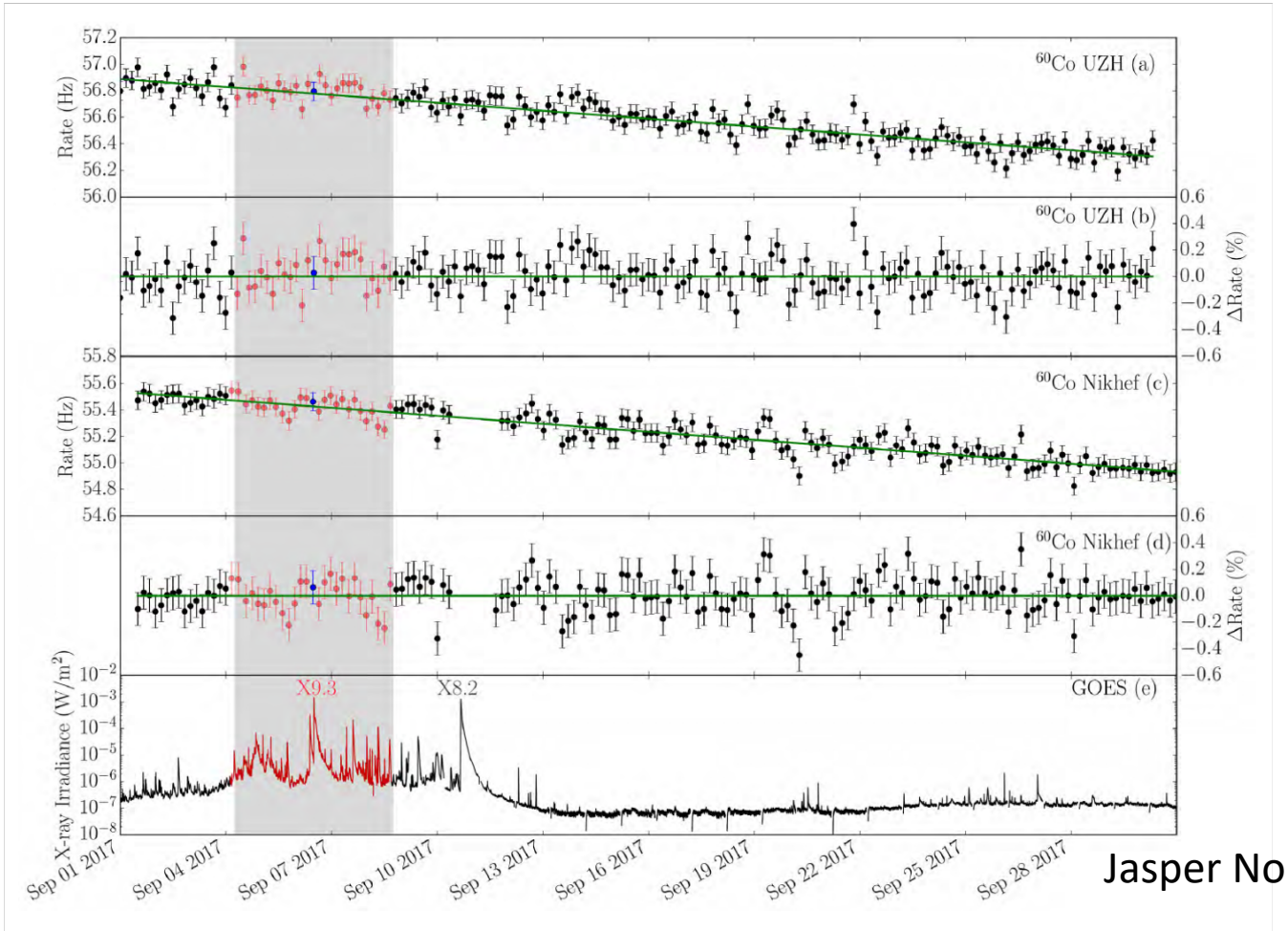
Information | References (21) | Citations (0) | Files | Plots

No correlation between Solar flares and the decay rate of several β-decaying isotopes

J.R. Angevaare, L. Baudis, P.A. Breur, A. Brown, A.P. Colijn, R.F. Lang, A. Massafferri, J.C.P.Y. Nobelen, R. Perci, C. Reuter, M. Schumann *Hide*

Jun 8, 2018 - 5 pages

Astropart.Phys. 103 (2018) 62-66
(2018-12)
DOI: 10.1016/j.astropartphys.2018.07.003
e-Print: arXiv:1806.03202 [nucl-ex] | PDF



Jasper Nobelen & Sander Breur

Modulation

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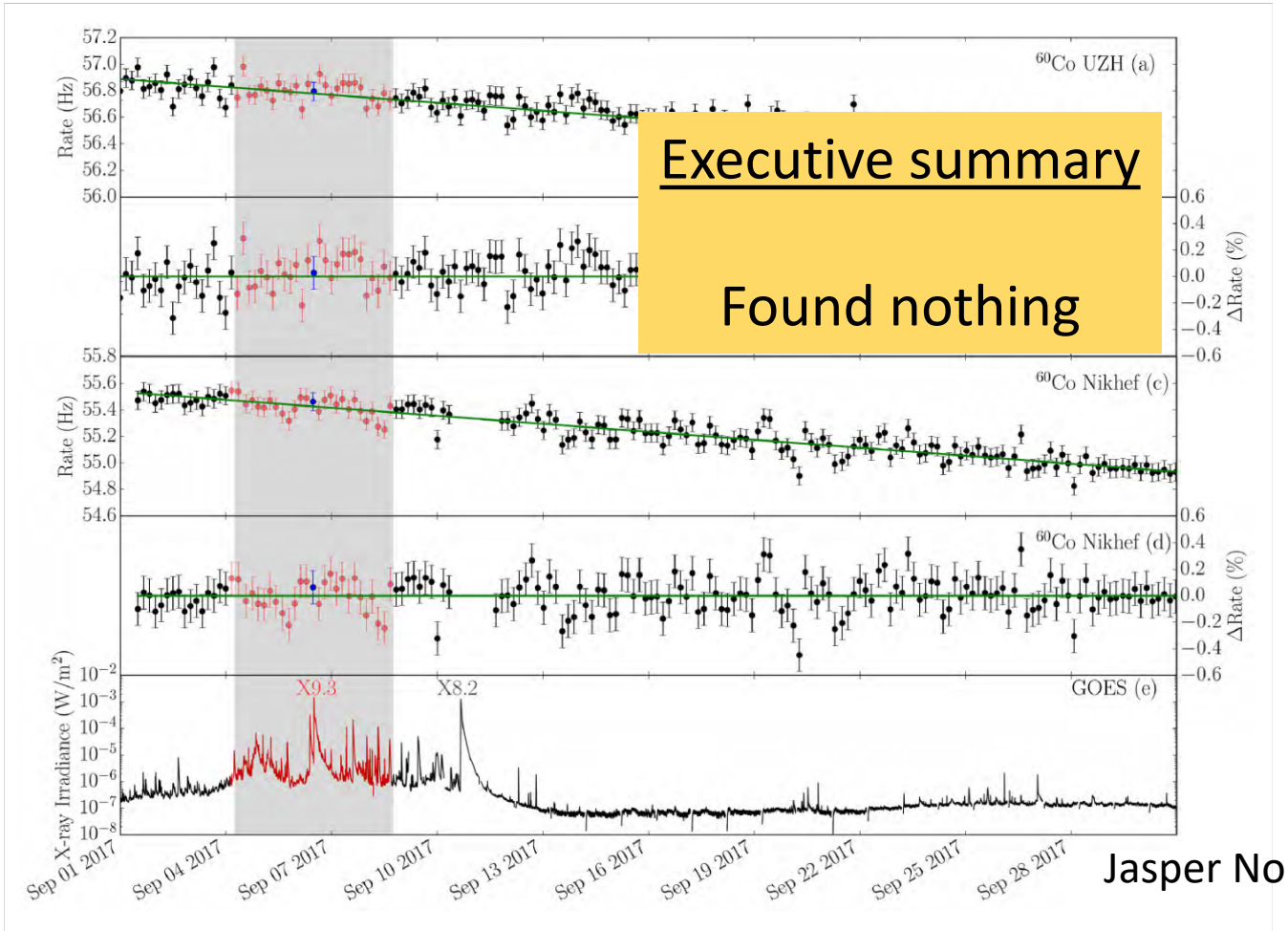


Executive summary

Found nothing

Jasper Nobelen & Sander Breur

Long run with >1 experiment

- Thomas Mons (MSc) running the show now
- SURFSara data & analysis facility ft. Thomas &Roel Aaij
- In one year from now analysis of multi-setup

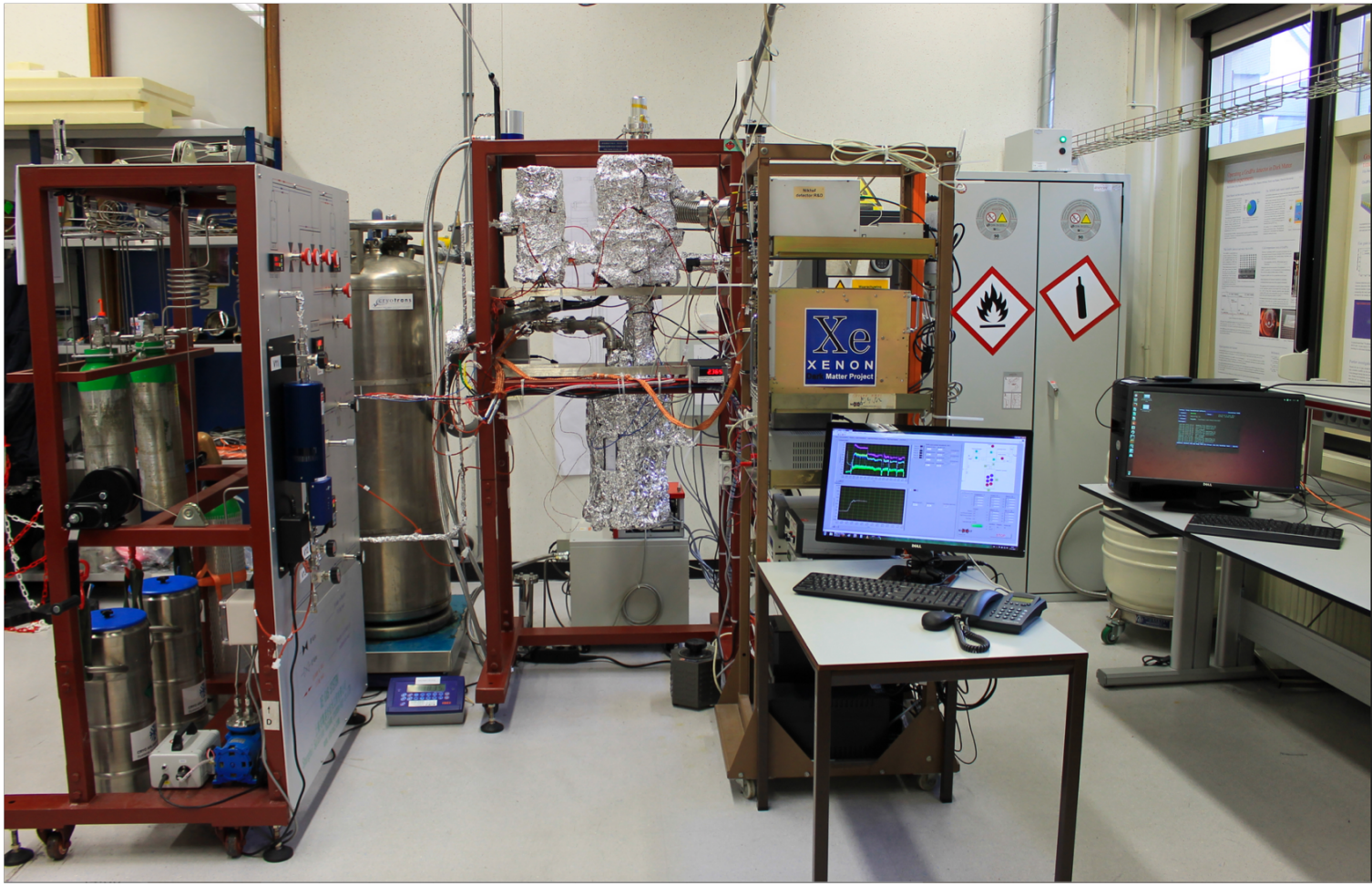
XAMS

XAMS

Commissioning of a dual-phase xenon TPC at Nikhef

E. Hogenbirk, J. Aalbers, M. Bader, P.A. Breur, A. Brown, M.P. Decowski, C. Tunnell, R. Walet, A.P. Colijn

Nikhef, Science Park 105, 1098 XG Amsterdam, The Netherlands



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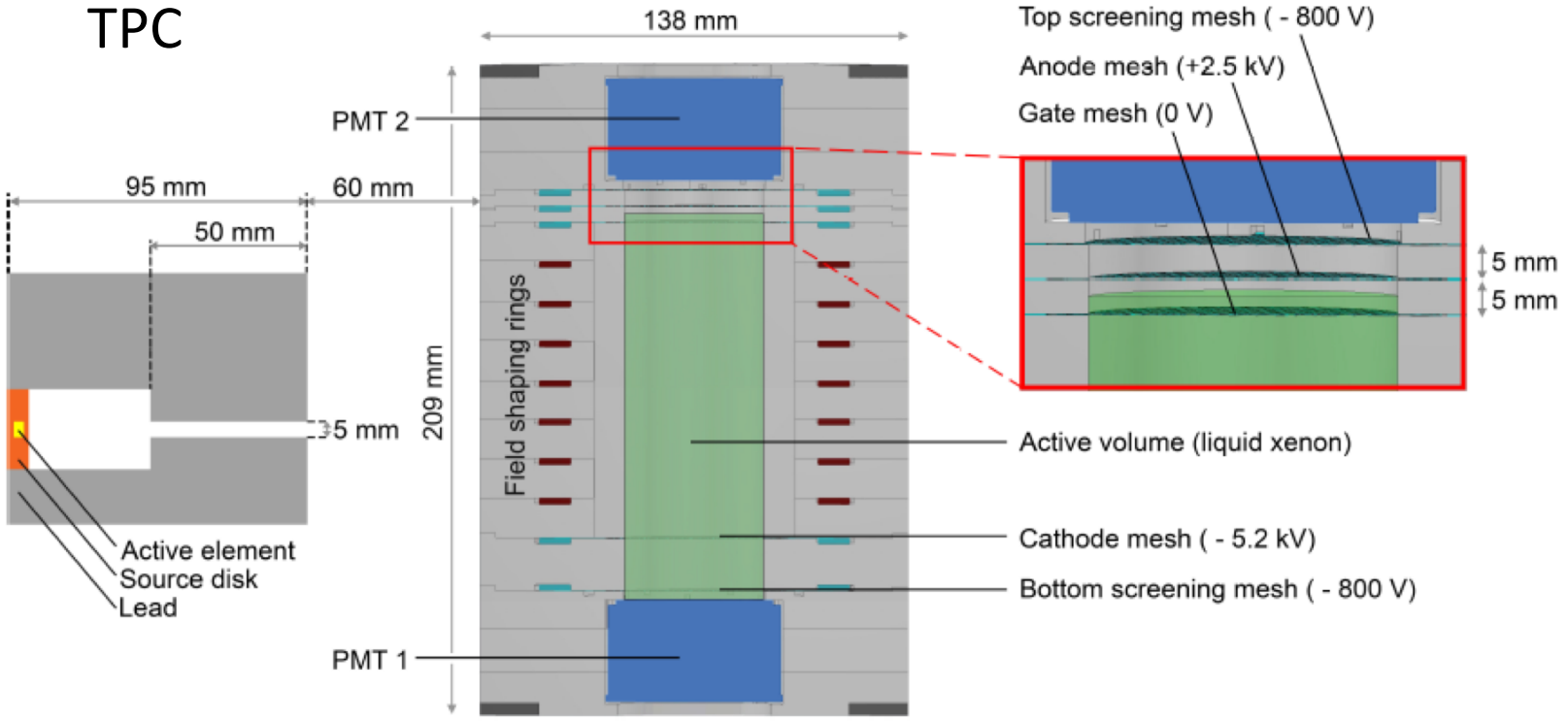
TPC



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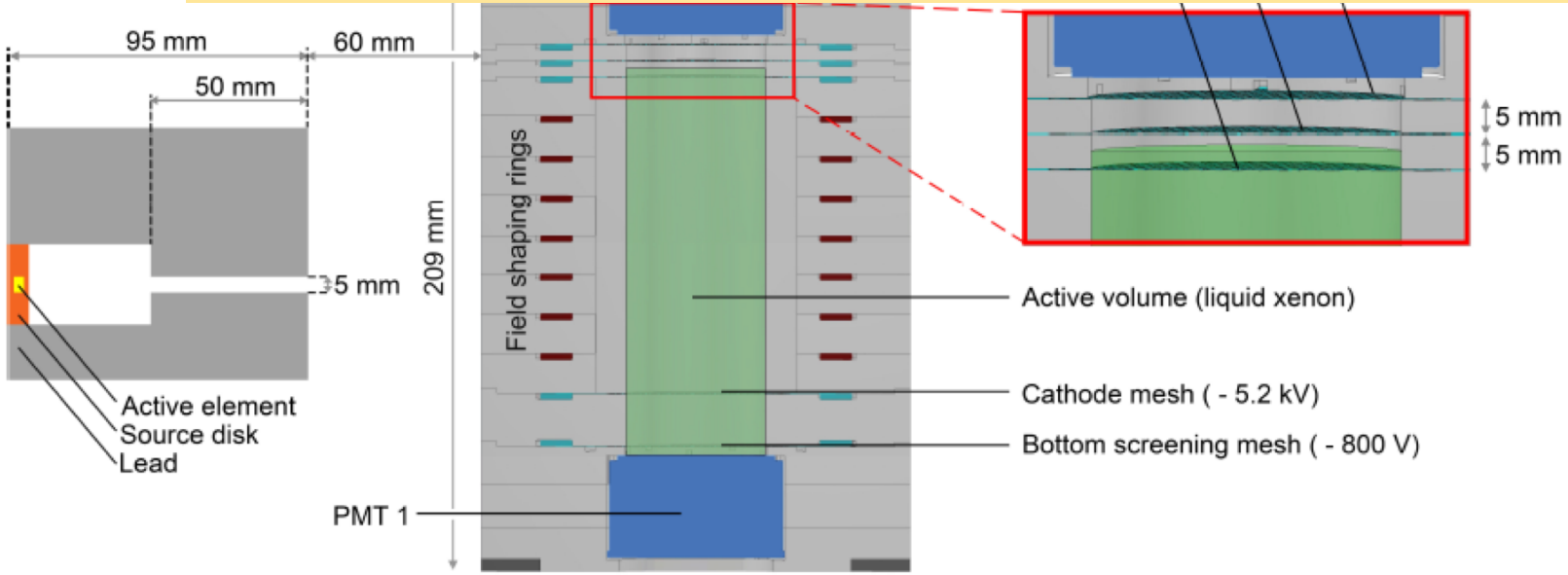
Nikhef, Science Park 105, 1098 XG Amsterdam, The Netherlands

TPC

Goal: R&D for next generation xenon TPCs



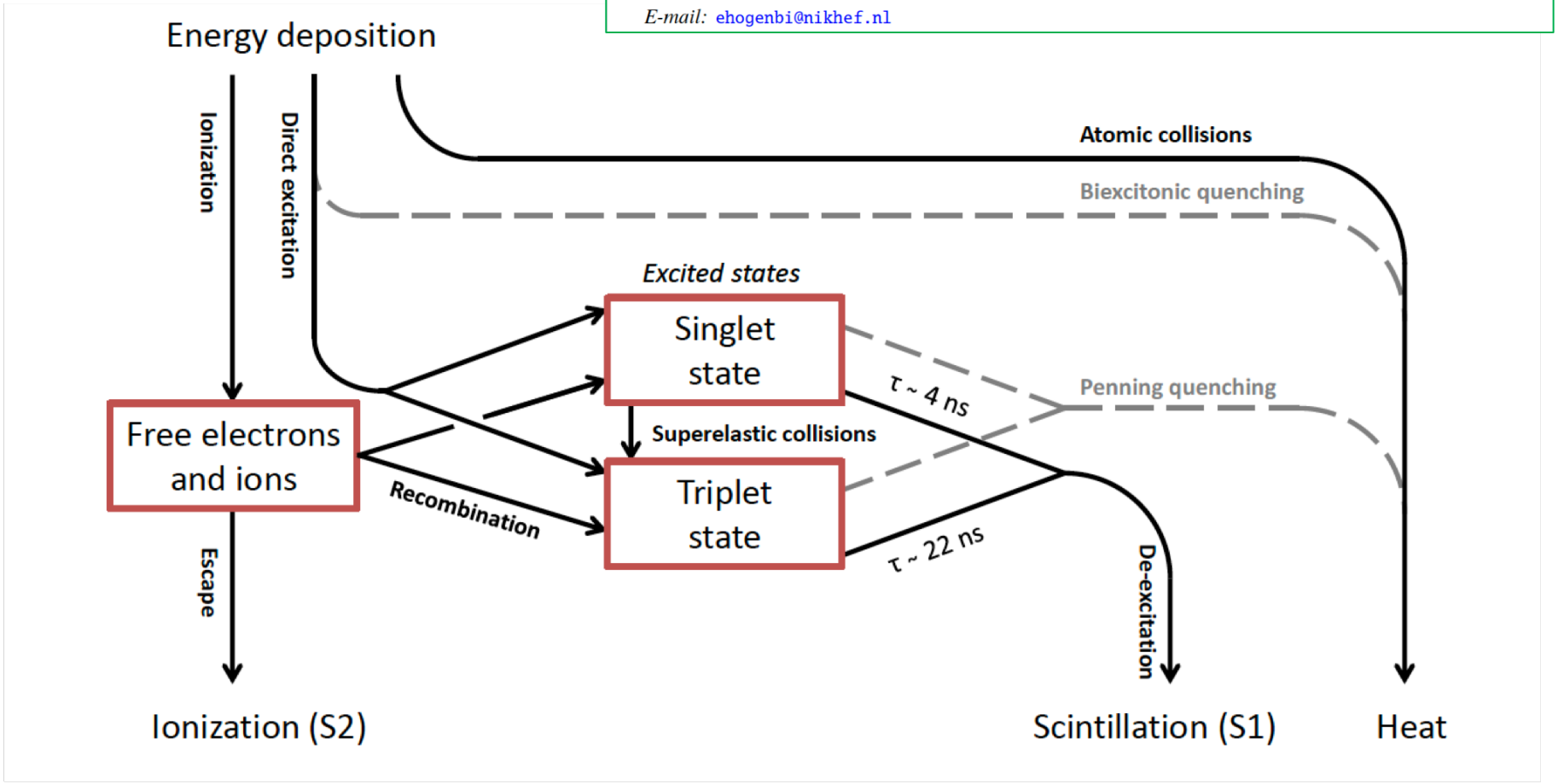
XAMS

Precision measurements of the scintillation pulse shape for low-energy recoils in liquid xenon

E. Hogenbirk,[1] J. Aalbers, P. A. Breur, M. P. Decowski, K. van Teutem, A. P. Colijn

Nikhef and the University of Amsterdam, Science Park, 1098XG Amsterdam, Netherlands

E-mail: ehogenbi@nikhef.nl



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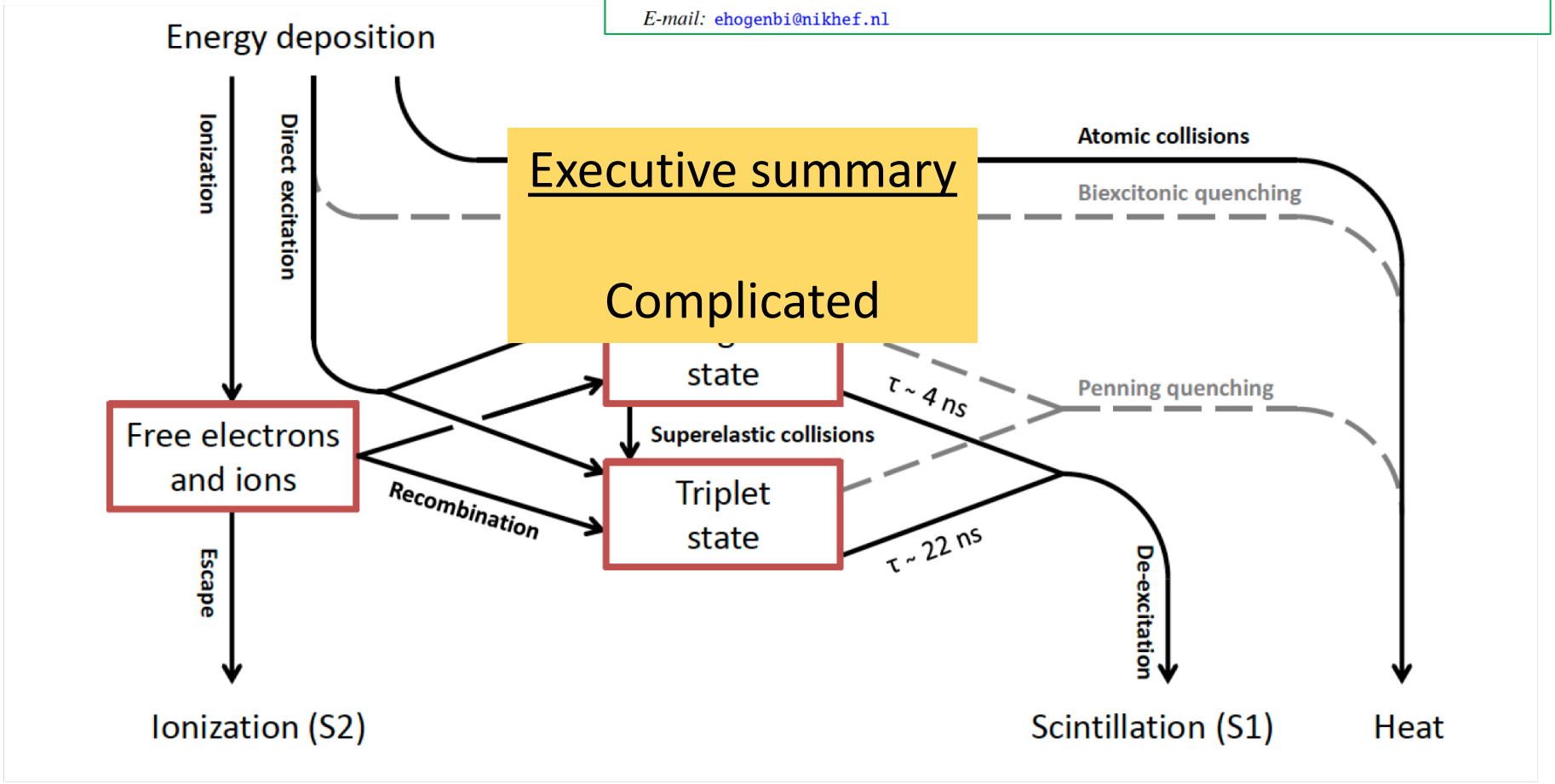
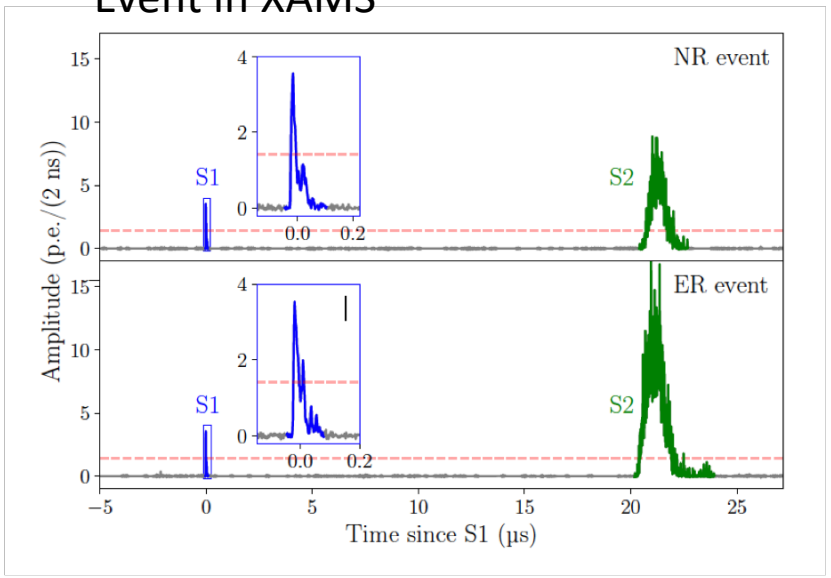


XAMS

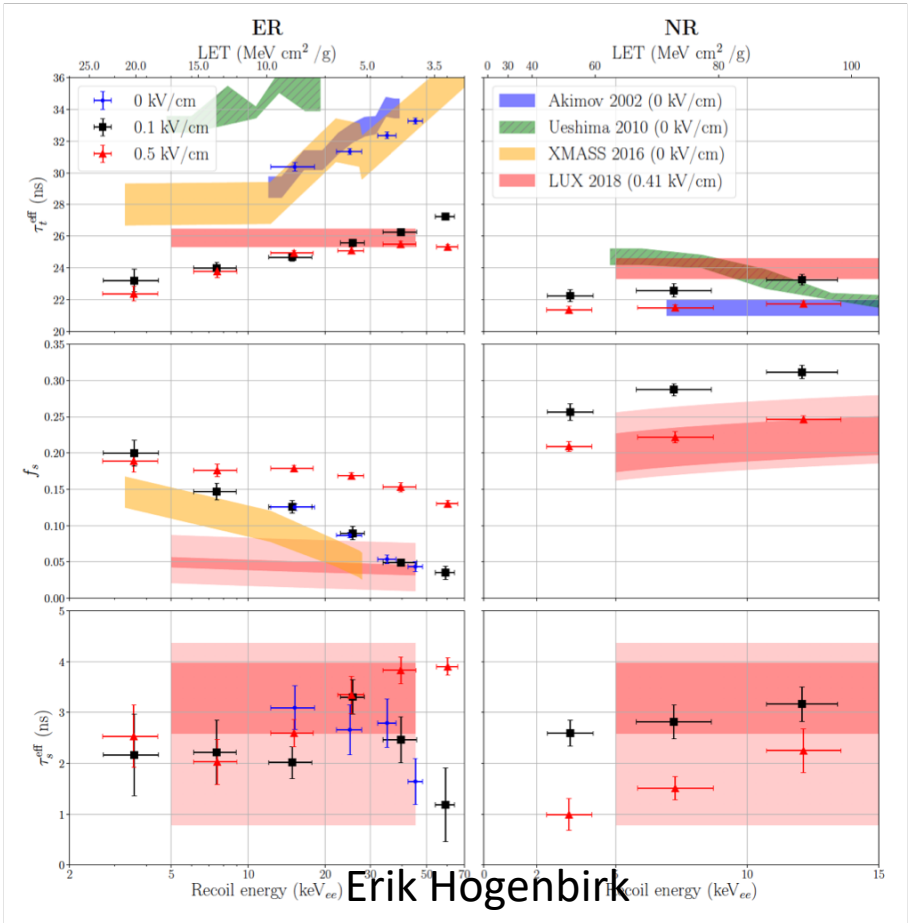
Event in XAMS



triplet lifetime

singlet fraction

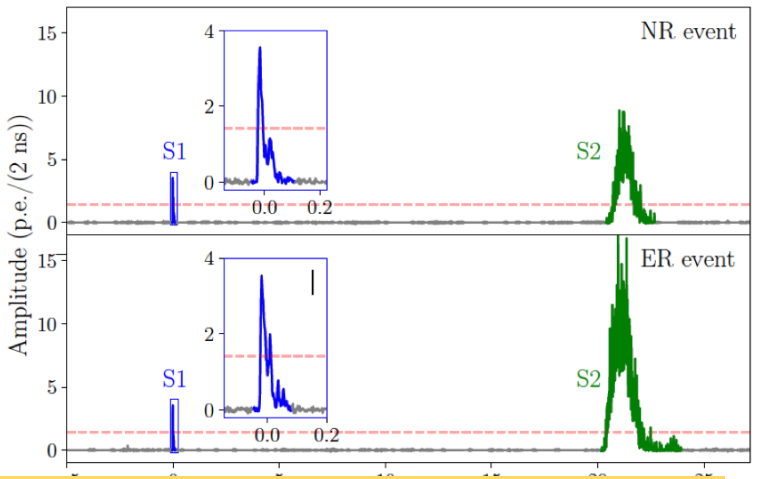
singlet lifetime



Erik Hogenbirk

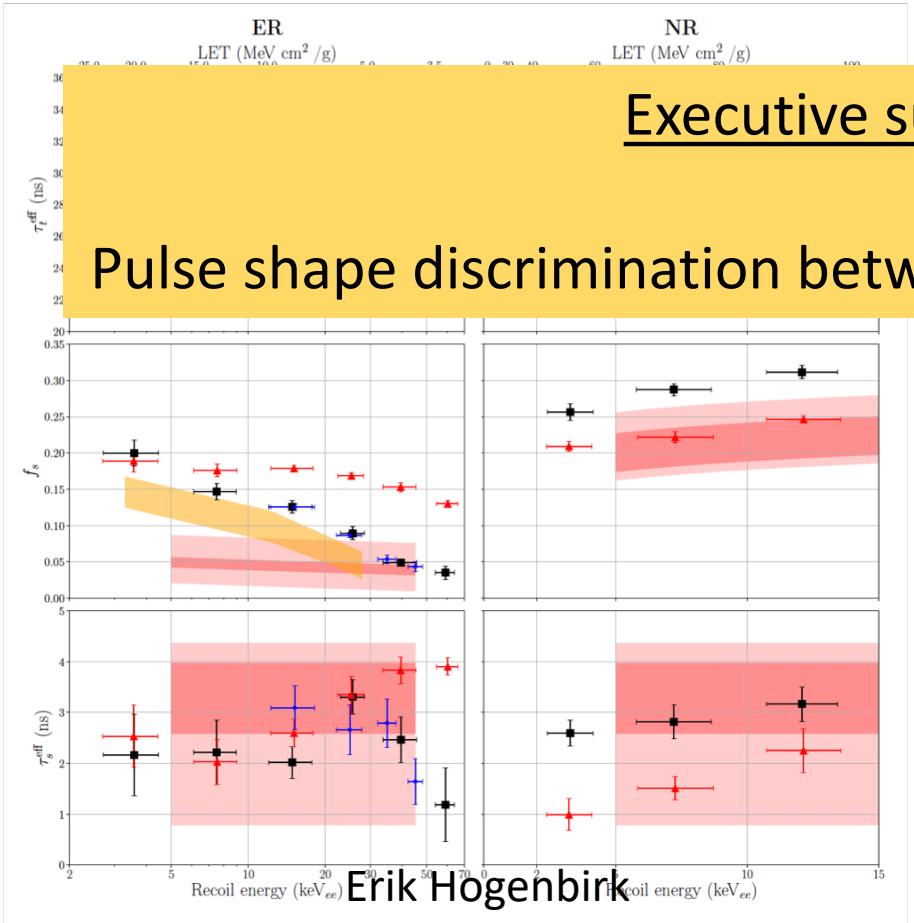
XAMS

Event in XAMS



Executive summary

Pulse shape discrimination between ER and NR will not work



singlet fraction

singlet lifetime

Erik Hogenbirk

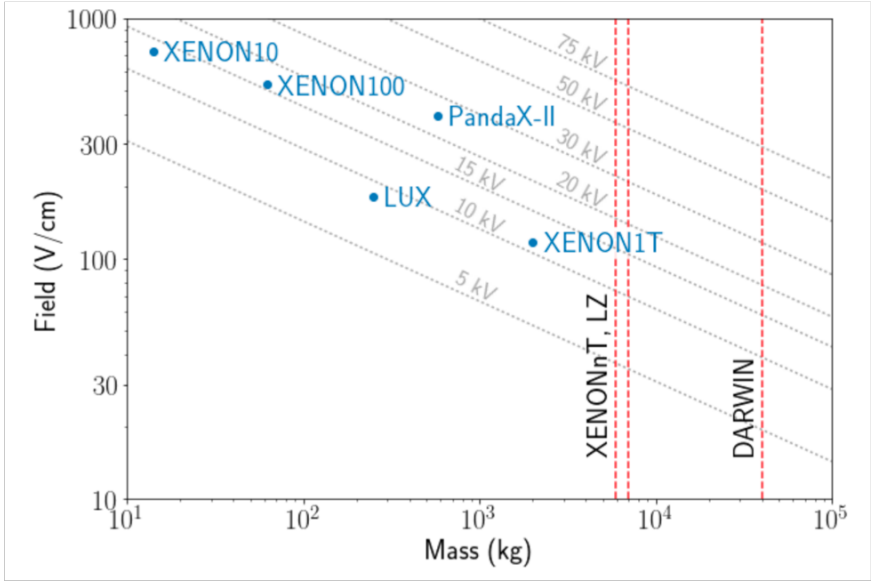
XAMS

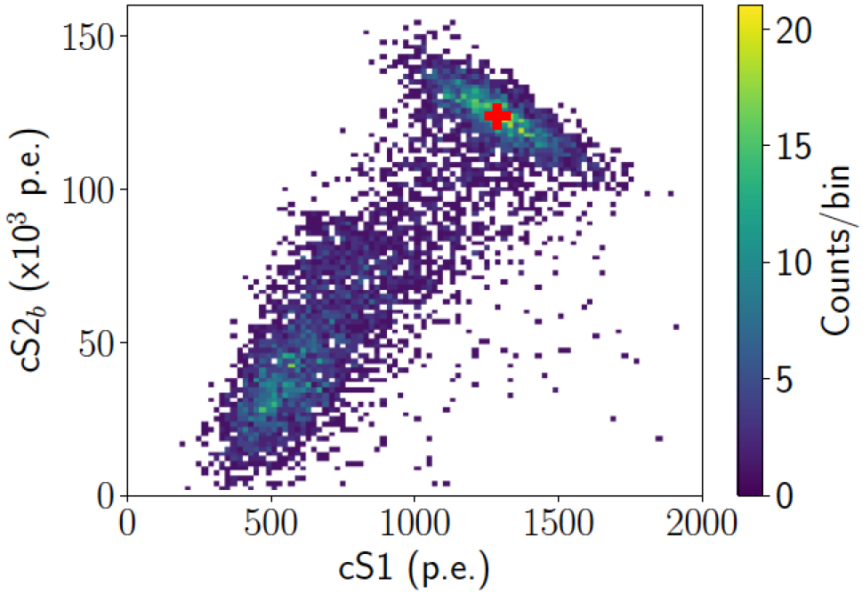
Field dependence of electronic recoil signals in a dual-phase liquid xenon time projection chamber

E. Hogenbirk,[1] M. P. Decowski, K. McEwan, A. P. Colijn

Nikhef and the University of Amsterdam, Science Park, 1098XG Amsterdam, Netherlands

E-mail: ehogenbi@nikhef.nl





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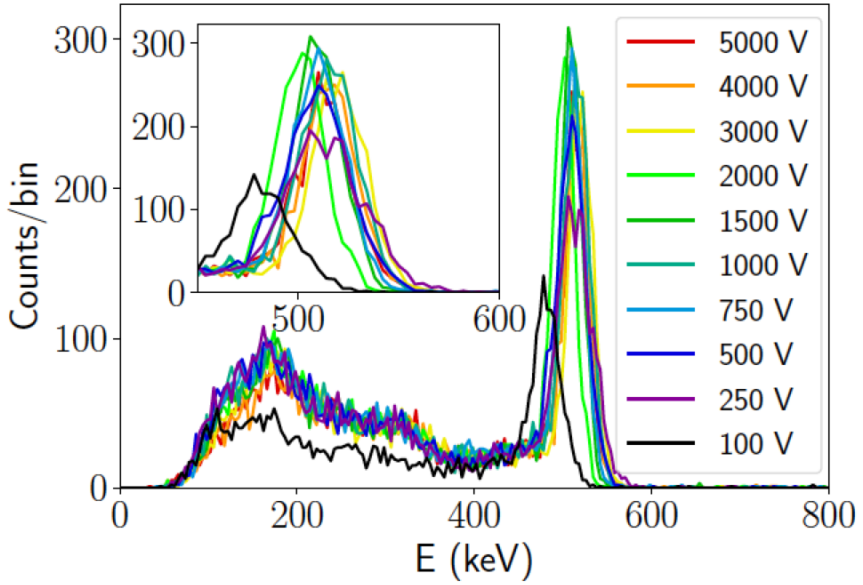


(b)

XAMS

Drift velocity

Electron lifetime

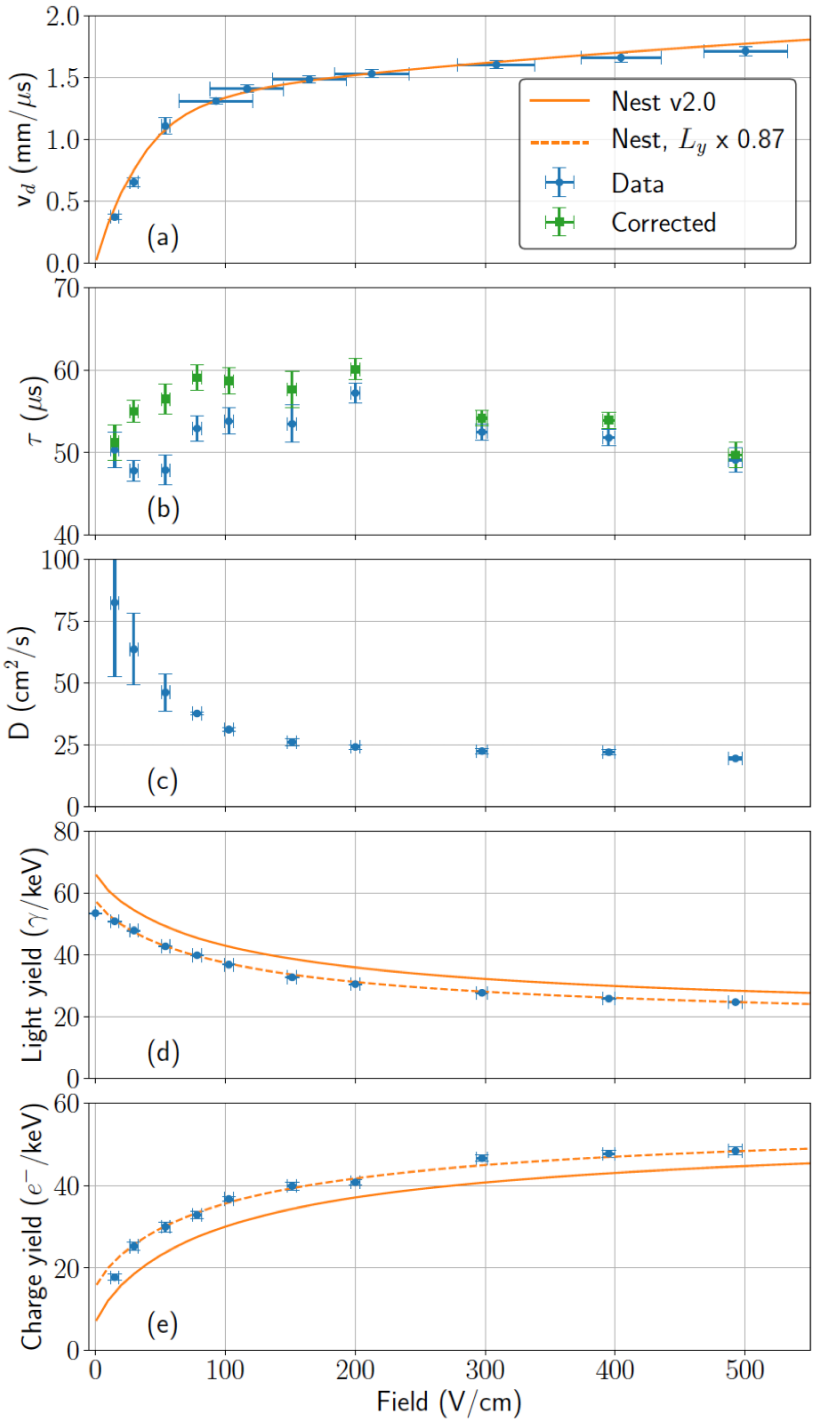
Diffusion coefficient

Light yield

Charge yield

Results compared to NEST2.0

Excellent match, except scale of light and charge yields



XAMS

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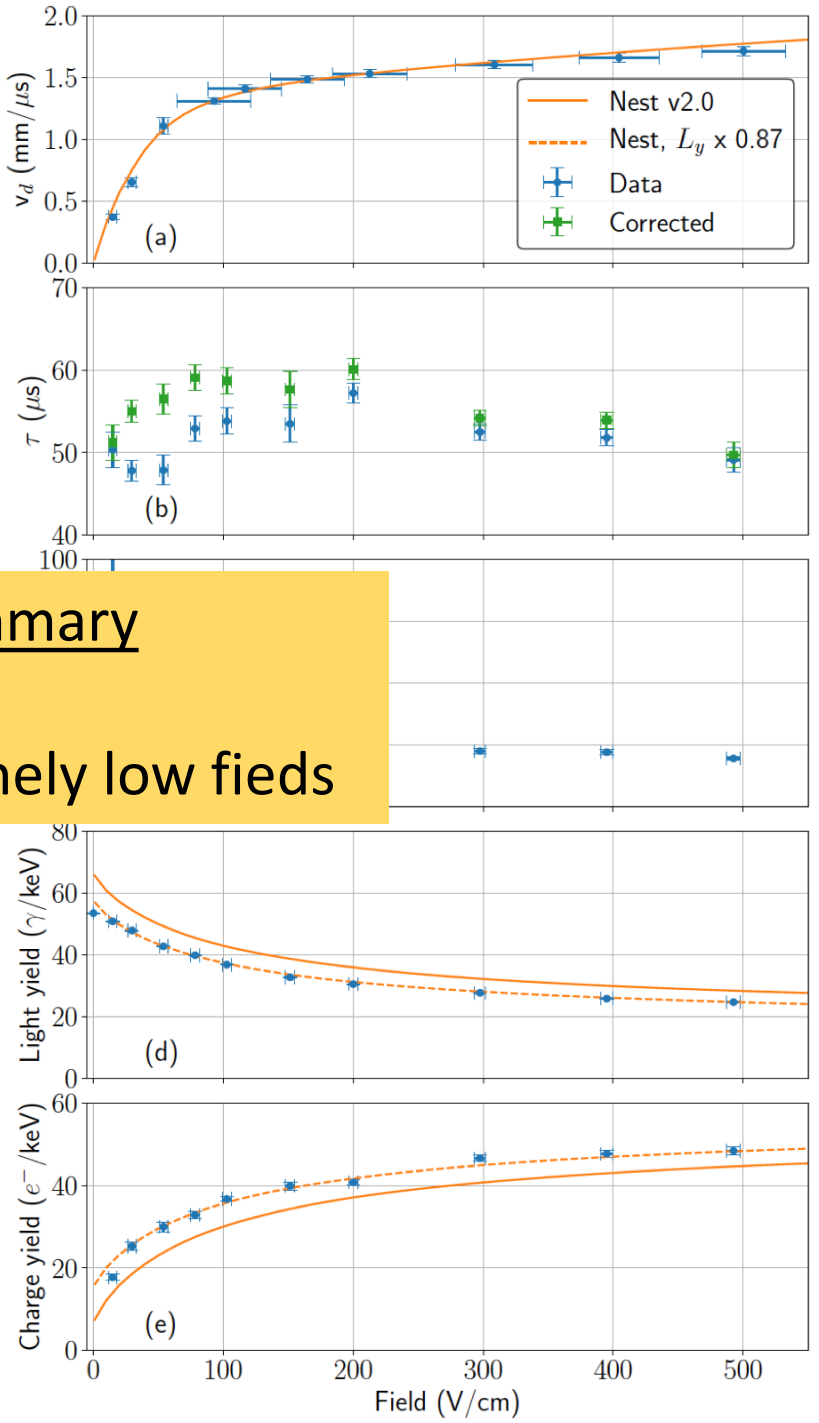


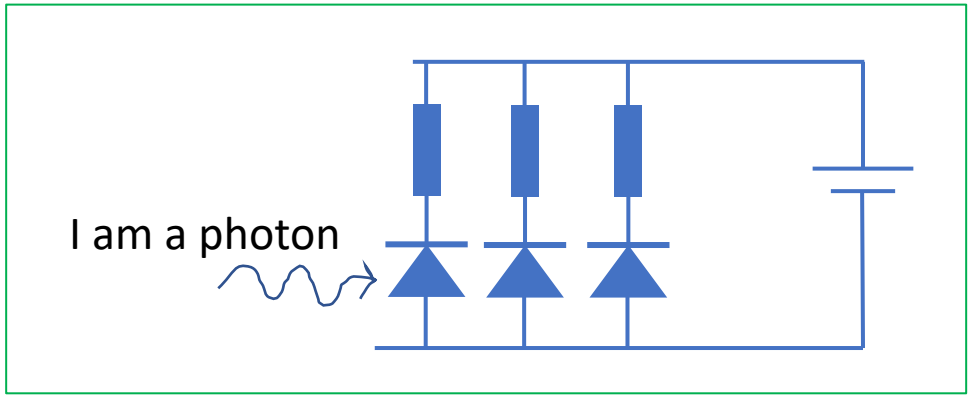
Executive summary

Be careful with extremely low fieds

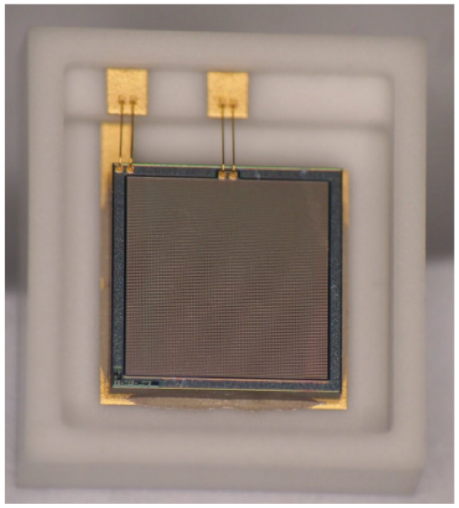
Results compared to NEST2.0

Excellent match, except scale of light and charge yields

XAMS on SiPMs



Hamamatsu (no-serial yet)



120x120 cells

3x3mm2

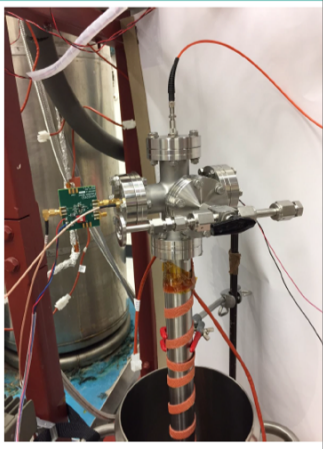
latest release!

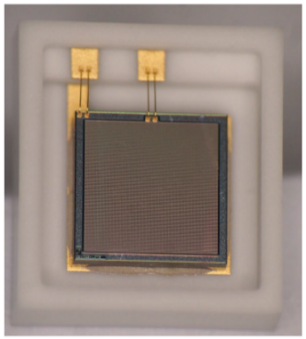
AIM: Replace top PMT in XAMS with SiPM array

WHY: Superior position resolution -> neutron rejection / $2\beta0\nu$

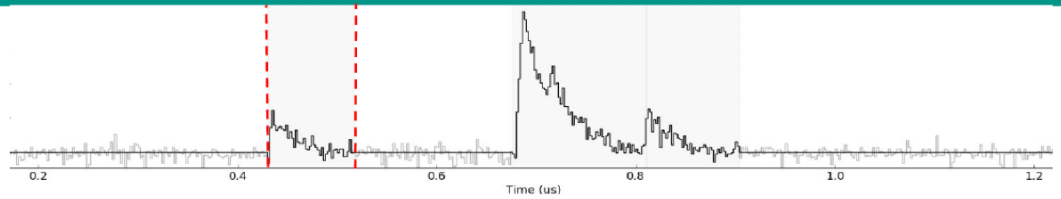
WHERE: Maybe something for next generation DM detectors - DARWIN

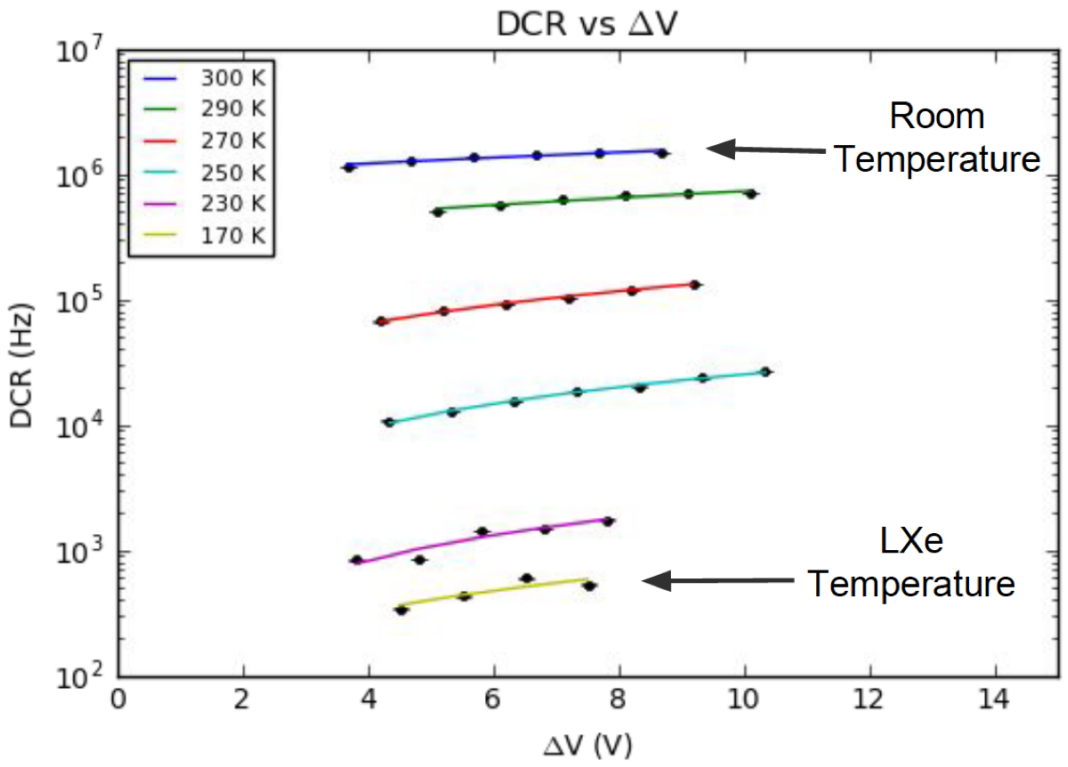
Dark Count Rate and Crosstalk

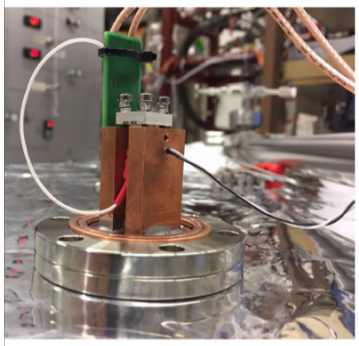


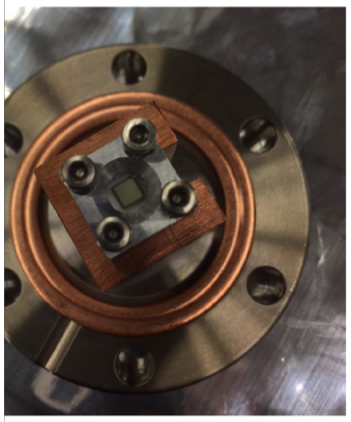


S13370-3025
6mm x 6mm

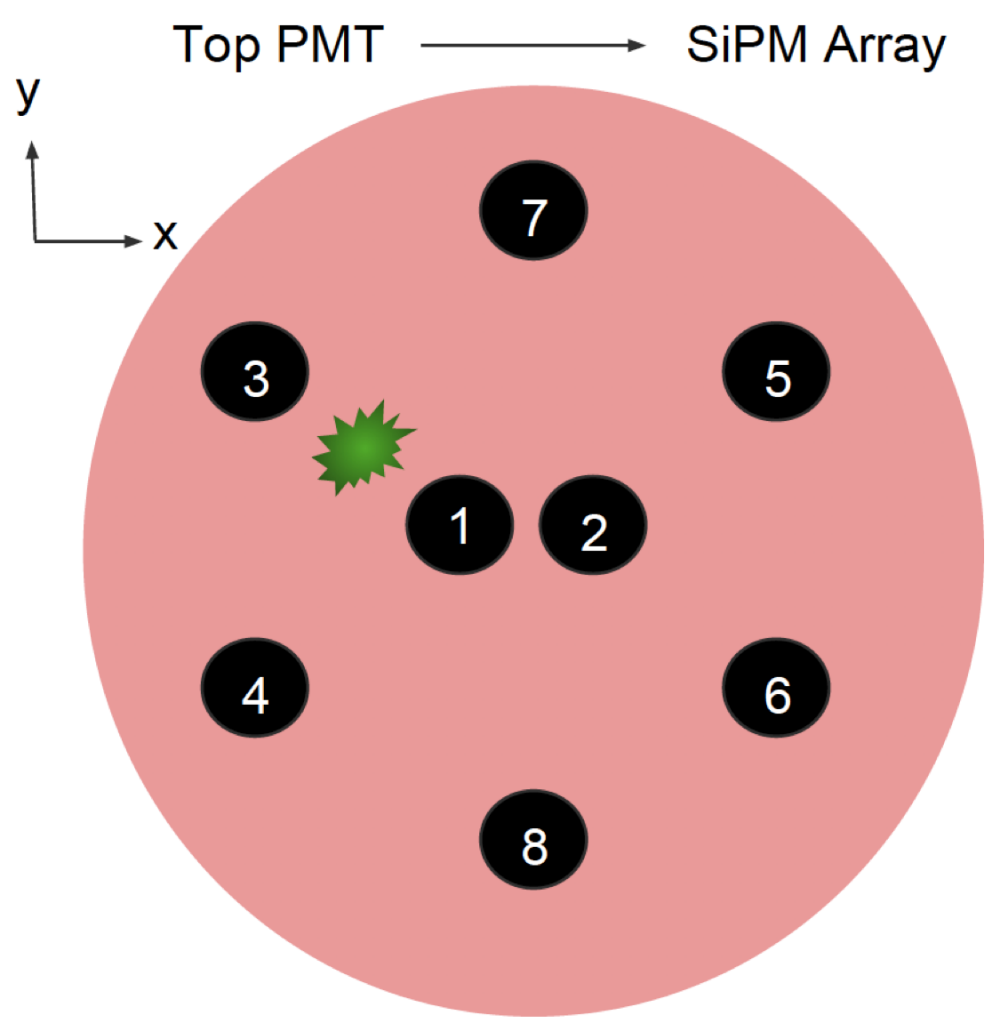






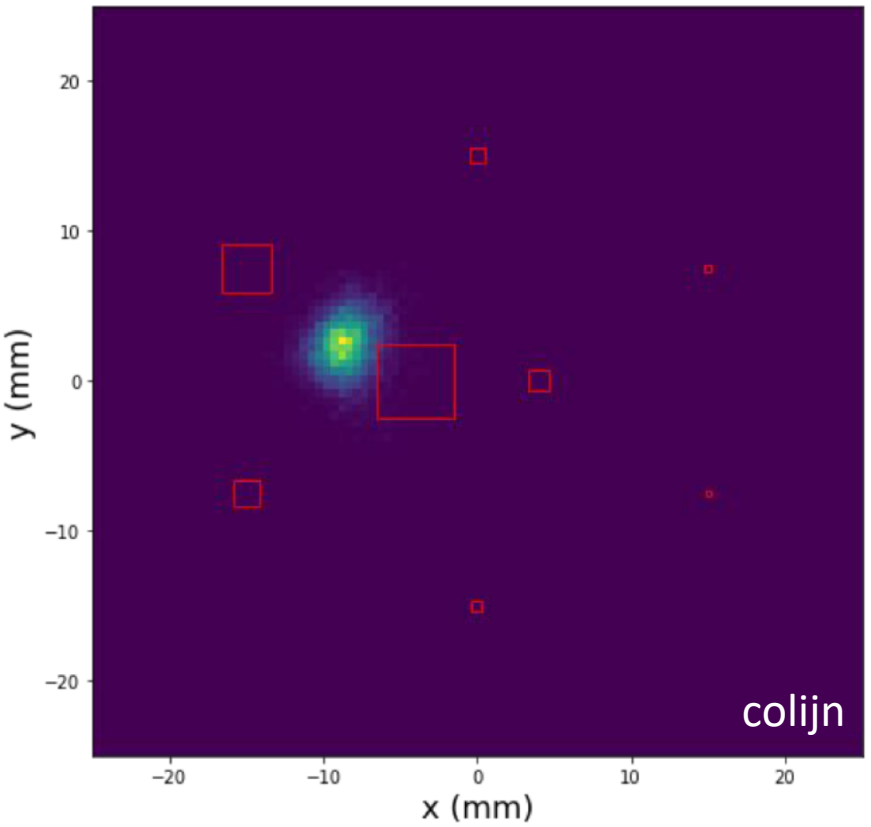


Alvaro Loya – MSc student – now at DARWIN meeting



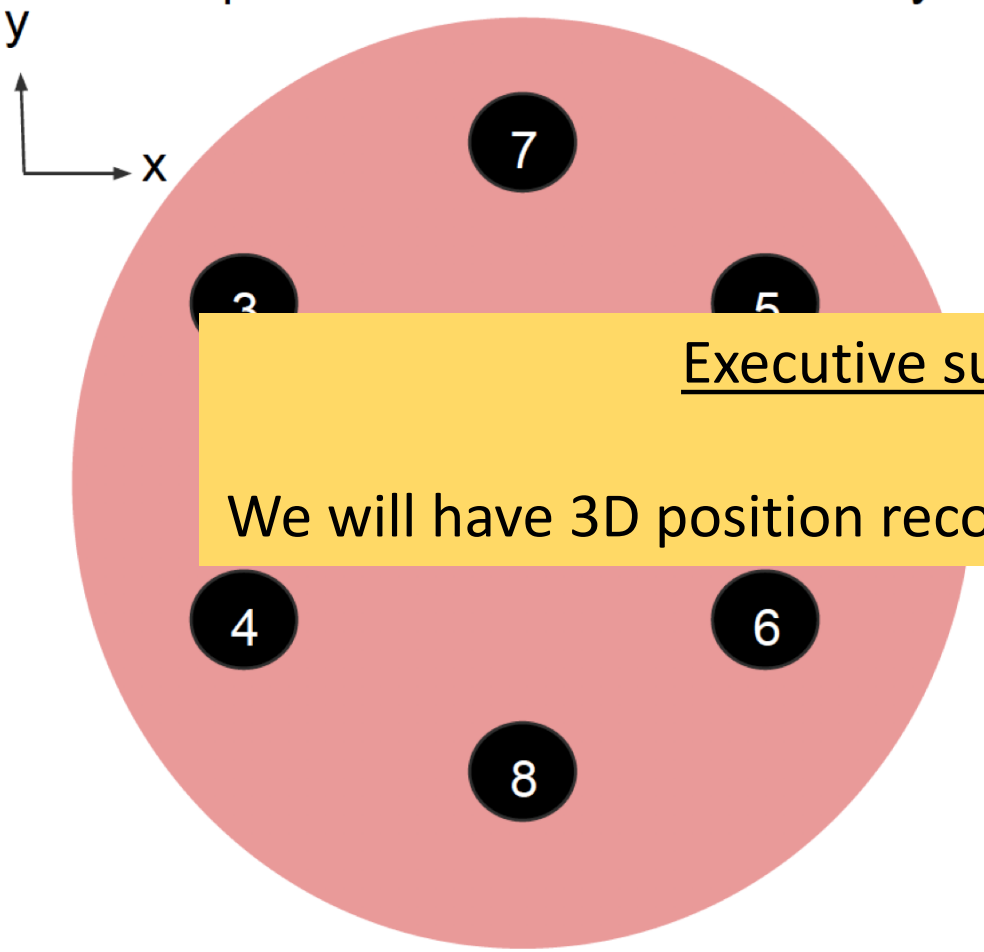
d = 45mm
generated at (-8.0 mm, 3.0 mm)

Reconstruction Simulation



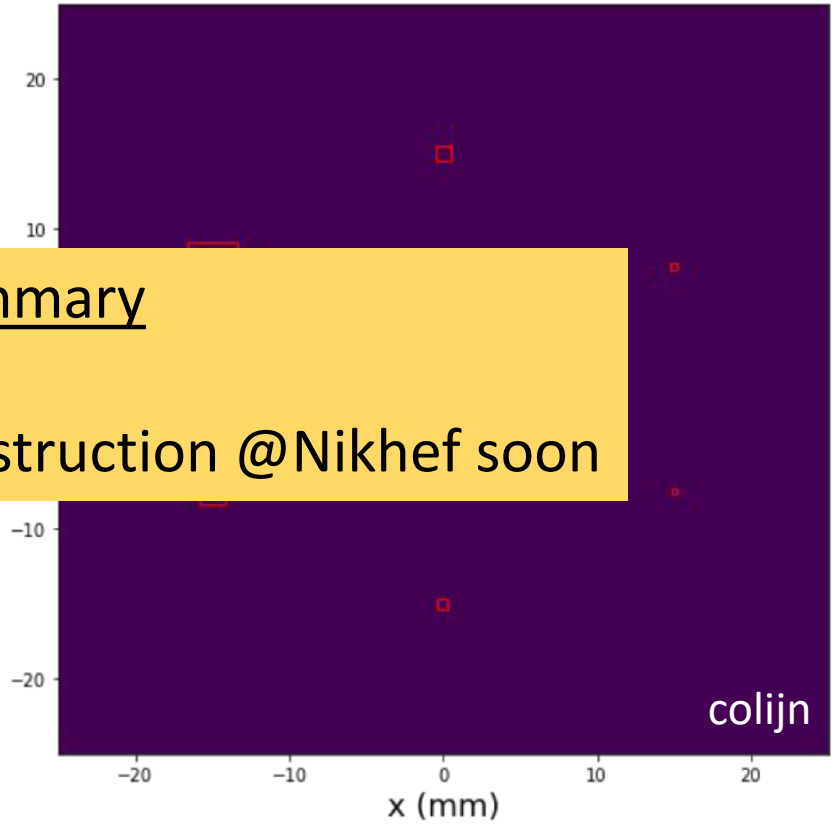
reconstructed at
(-8.14 mm, 3.21 mm)

Top PMT ⟶ SiPM Array



d = 45mm
generated at (-8.0 mm, 3.0 mm)

Reconstruction Simulation



reconstructed at
(-8.14 mm, 3.21 mm)

Executive summary

We will have 3D position reconstruction @Nikhef soon

Summary

In H037:

1. Modulation experiment
   - Investigation of funky claims – no confirmation
   - Sander Breur, Froukje Gjaltema, Dorine Schenk, Joran Angevaare, Jasper Nobelen MSc thesis
   - Thomas Mons in progress
   - Two publications so far
2. XAMS facility:
   - Let's make xenon better
   - Erik Hogenbirk, Maria Bader, Kiefer van Teutem, Katherine McEwan MSc thesis
   - Avaro Loya work in progress
   - Rolf Schon, Erik Hogenbirk PhD thesis
   - Three publications so far

Summary

In H037:

1. Modulation experiment
   - Investigation of funky claims – no confirmation
   - S… …n Angevaare, J…
   - T…
   - T…
2. XAMS facility:
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   - Avaro Loya work in progress
   - Rolf Schon, Erik Hogenbirk PhD thesis
   - Three publications so far

Executive summary

I like H037 – good place for newcomers