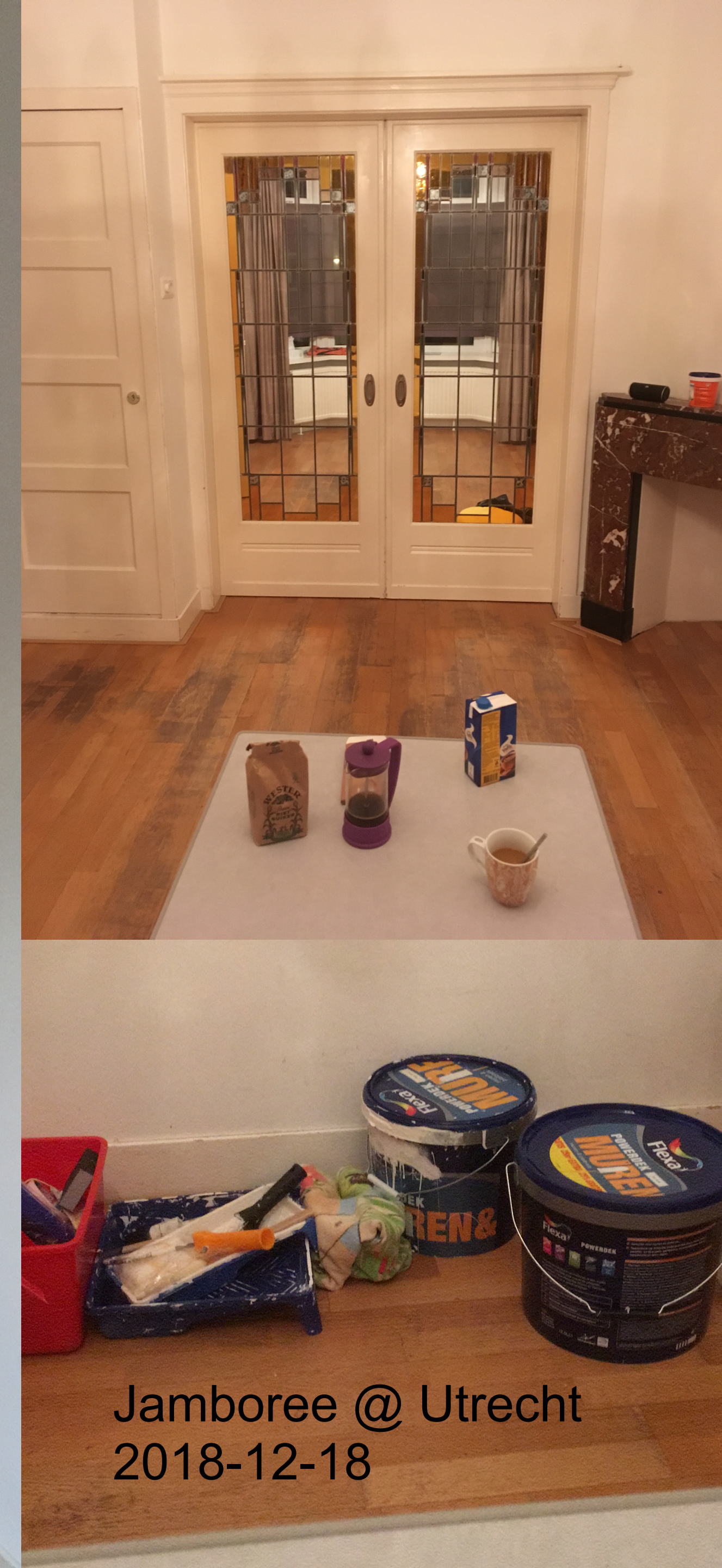


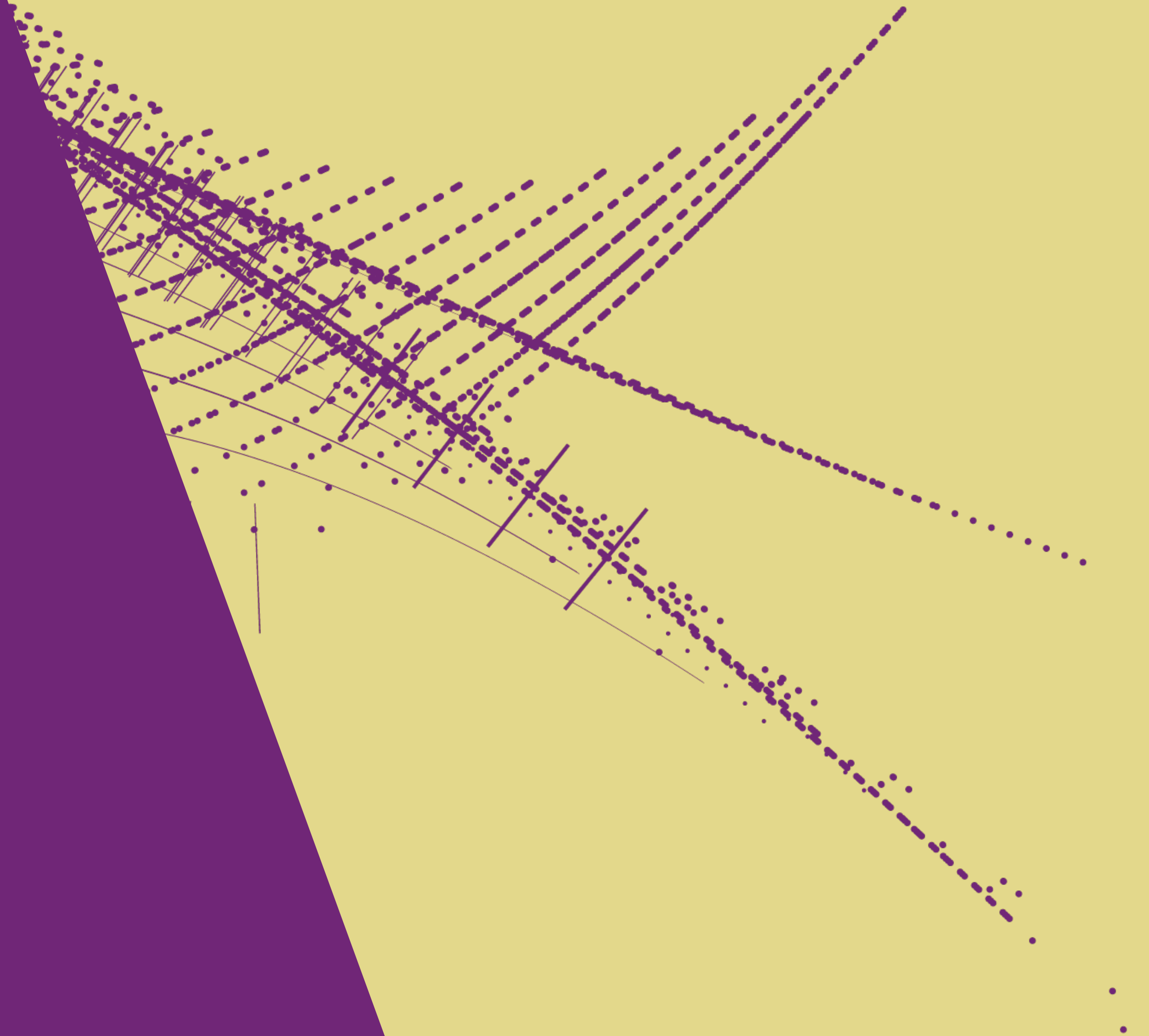
PHYSICS DATA  
PROCESSING



Jamboree @ Utrecht  
2018-12-18

Nikhef

APOLOGIES



Nikhef

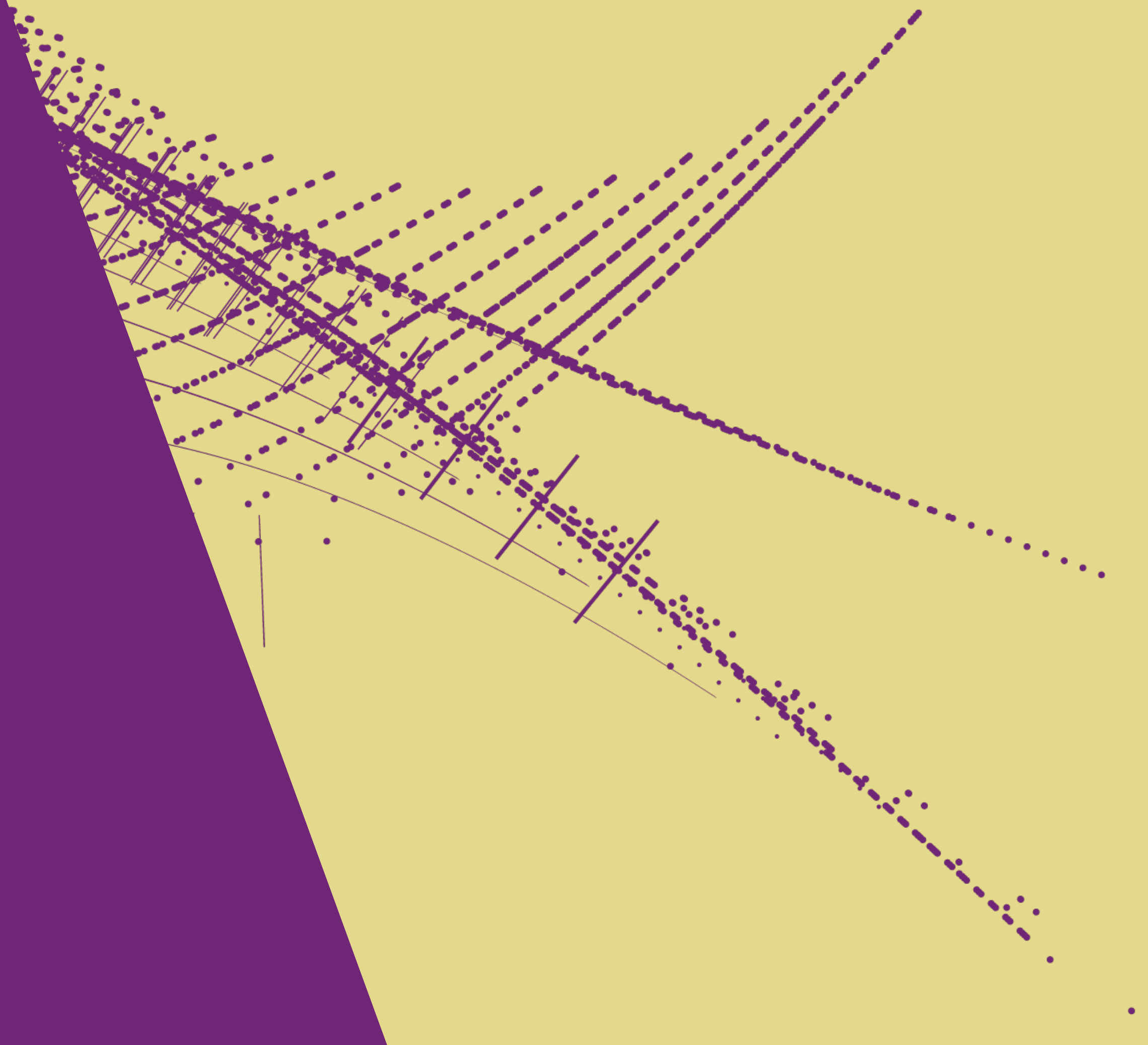
APOLOGIES



Nikhef

EXPERT VIEW

ESSENCE



Nikhef

SEPTEMBER 1983  
COLUMBIA,  
SOUTH CAROLINA

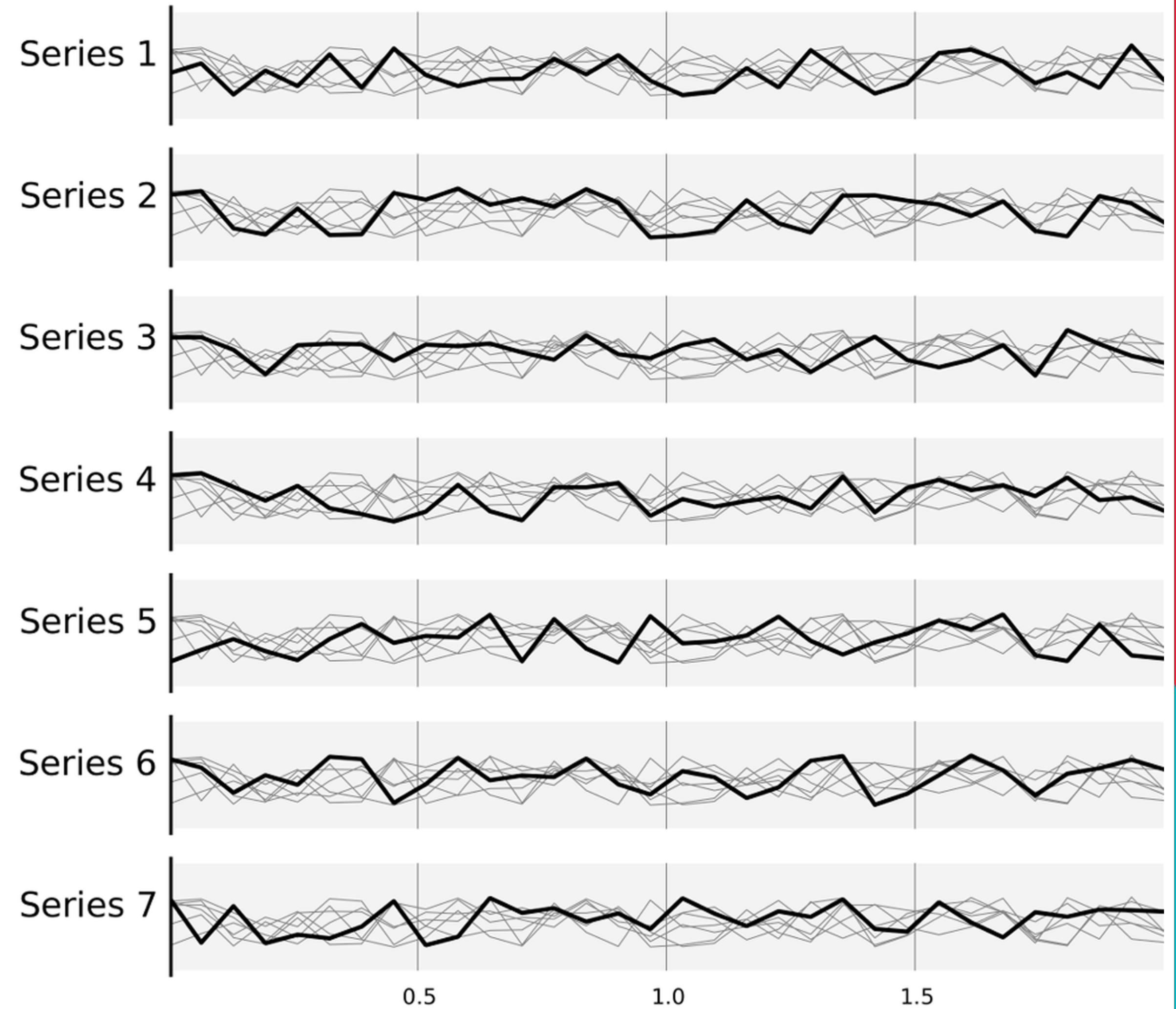
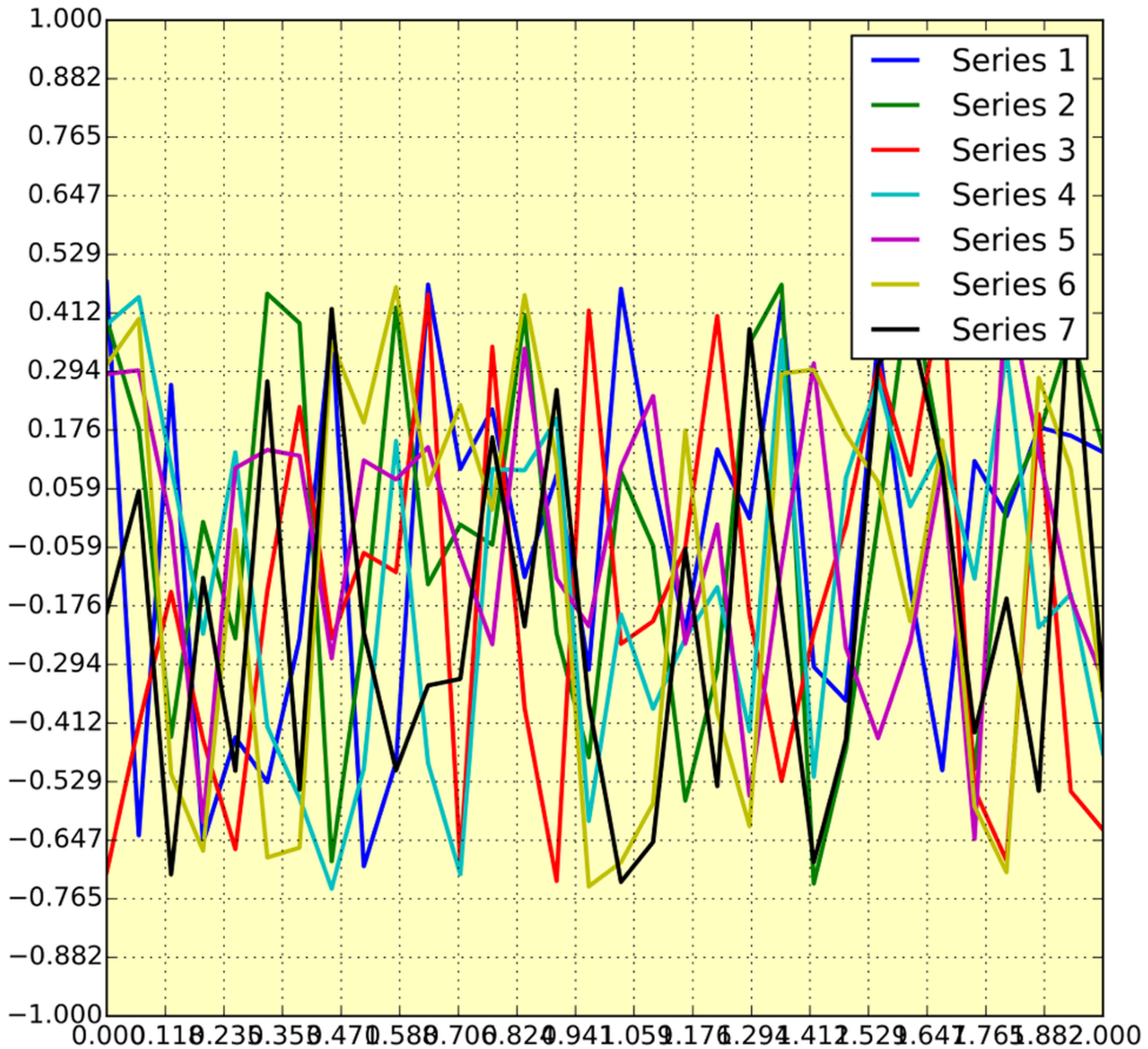
“Neutron Elastic Scattering from  $^{14}\text{N}$  between 11 and 17 MeV,” J. A. Templon *et al.*,  
Bull. Am. Phys. Soc. **29**, 131 (1984).

“Neutron Scattering Cross Sections from  $^{14}\text{N}$  and  $^9\text{Be}$  at 11, 14, and 17 MeV,” J. A.  
Templon, J. H. Dave, C. R. Gould, and S. Singkarat, Nucl. Sci. Eng. **91**, 451 (1985).

EXPERT VIEW

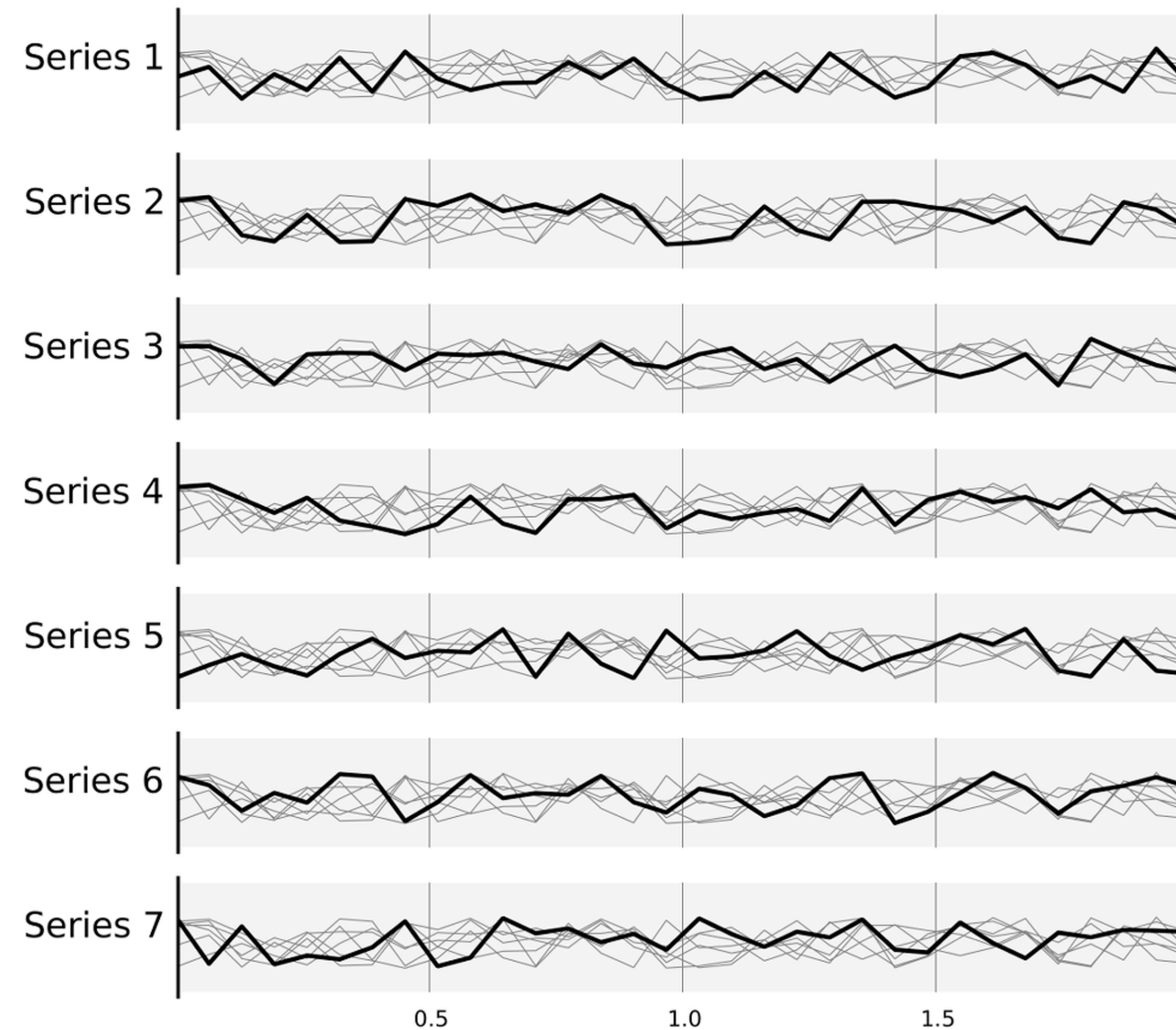
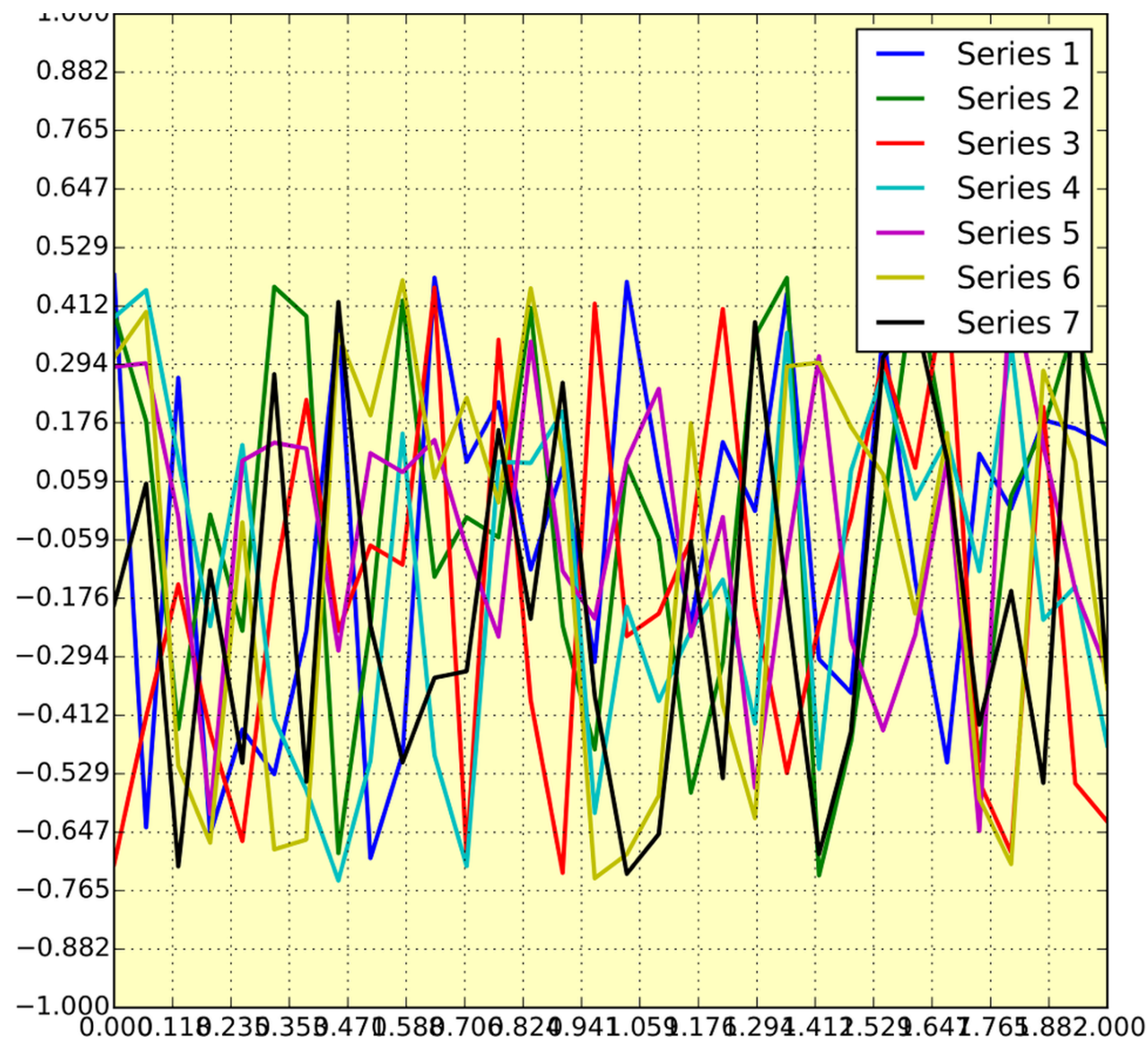
ESSENCE

# A TALE OF TWO FIGURES



# CHART JUNK

Markings and visual elements can be called chartjunk if they are not part of the minimum set of visuals necessary to communicate the information understandably. Examples of unnecessary elements that might be called chartjunk include heavy or dark grid lines, unnecessary text, inappropriately complex or gimmicky font faces, ornamented chart axes, and display frames, pictures, backgrounds or icons within data graphs, ornamental shading and unnecessary dimensions.



# CHART JUNK

Markings and visual elements can be called chartjunk if they are not part of the minimum set of visuals necessary to communicate the information understandably. Examples of unnecessary elements that might be called chartjunk include heavy or dark grid lines, unnecessary text, inappropriately complex or gimmicky font faces, ornamented chart axes, and display frames, pictures, backgrounds or icons within data graphs, ornamental shading and unnecessary dimensions.

## OUTLOOK

- Current program lines are the relevant ones  
*focus on present needs or problems*
- Grow NL-T1 (LHC) and VIRGO CC
  - funding proposal in 2019
  - recently joined DUNE Computing Consortium
  - also support XENON and KM3NeT
- R&D on Local Facility (GPU, data bandwidth)
- R&D on sw (online reco, data compression)
- steady modernization of collaboration (sw) infra
  - without hooks of Google, Apple, Facebook, Amazon!



X

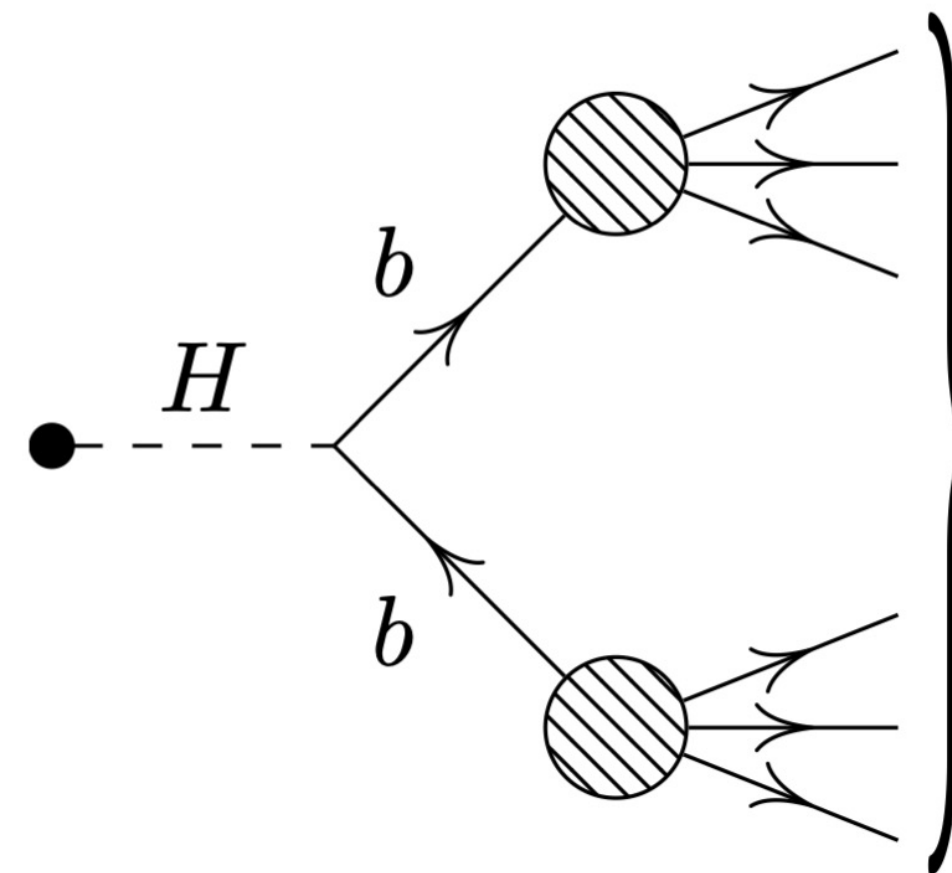
Physics Data Processing, RECFA @ Nikhef 2018-10-19

Nikhef



## The hunt for $H \rightarrow bb$

- Branching ratio  $H \rightarrow bb \sim 58\%$



Hadronic signature at a hadron collider

$$\frac{\sigma(bb)}{\sigma(H)} \sim 10^7$$

# PDP PROGRAMME LINES

STOOMBOOT, GRID

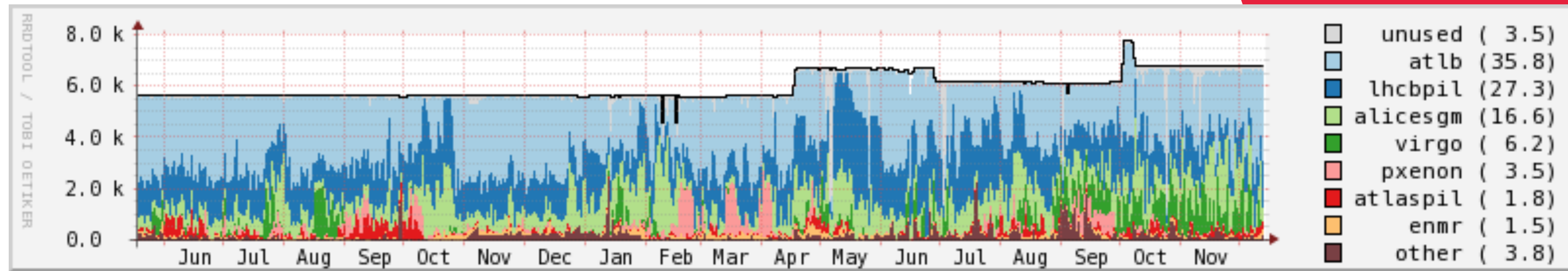
RI - DEVOPS

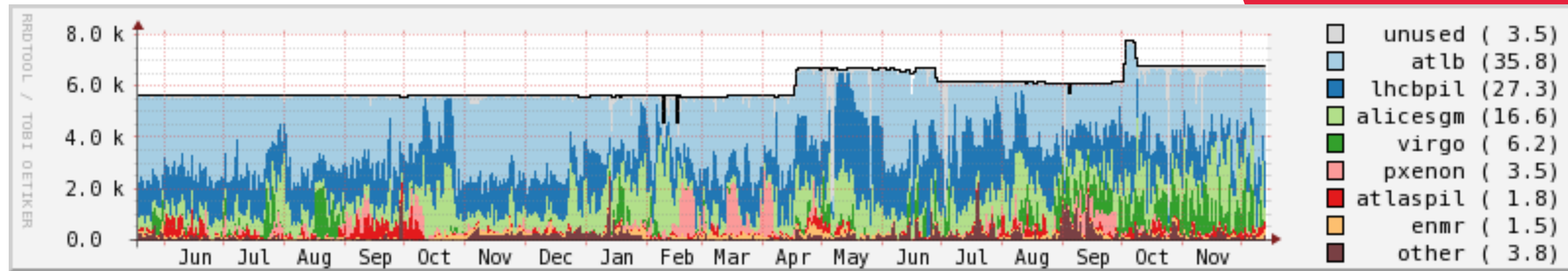
ACT: NEXT-GEN ...

LOTS OF COMPUTERS,  
DISKS, AND NETWORK

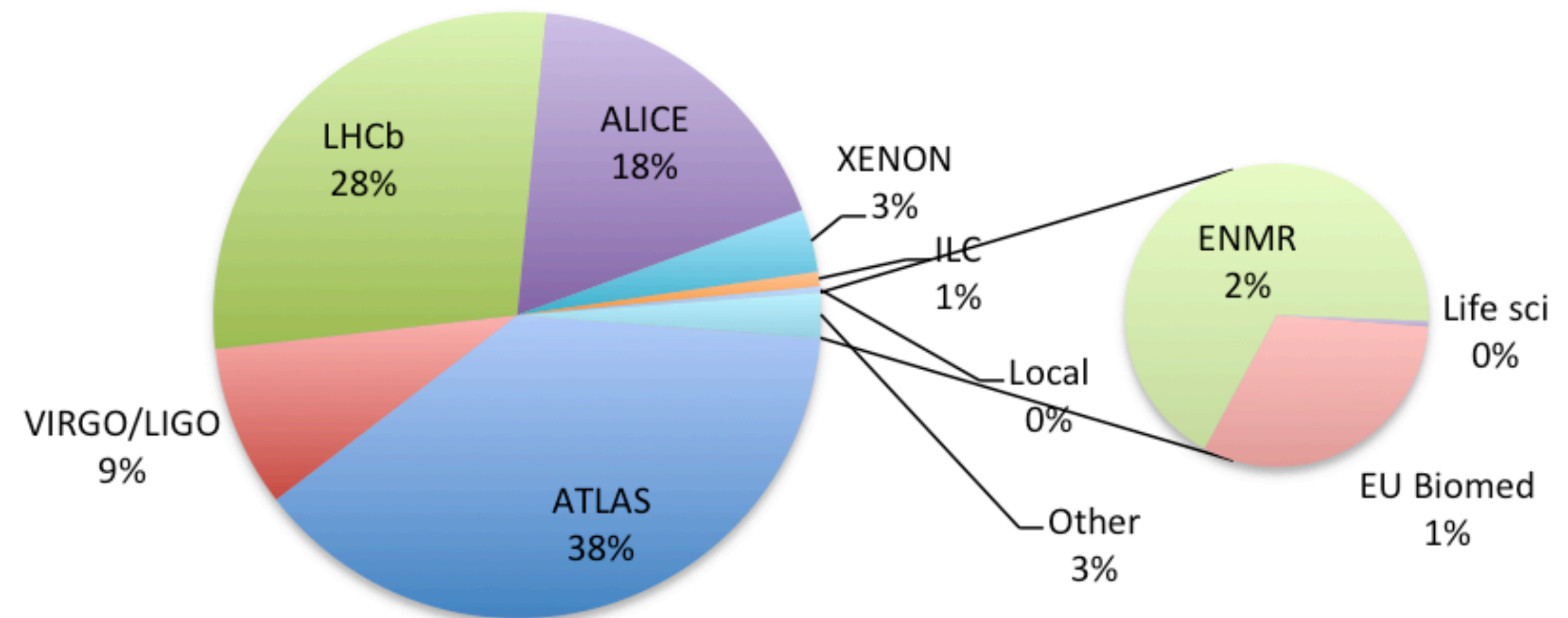
AAC: USING ...

I4C: USING OTHER  
PEOPLES ...

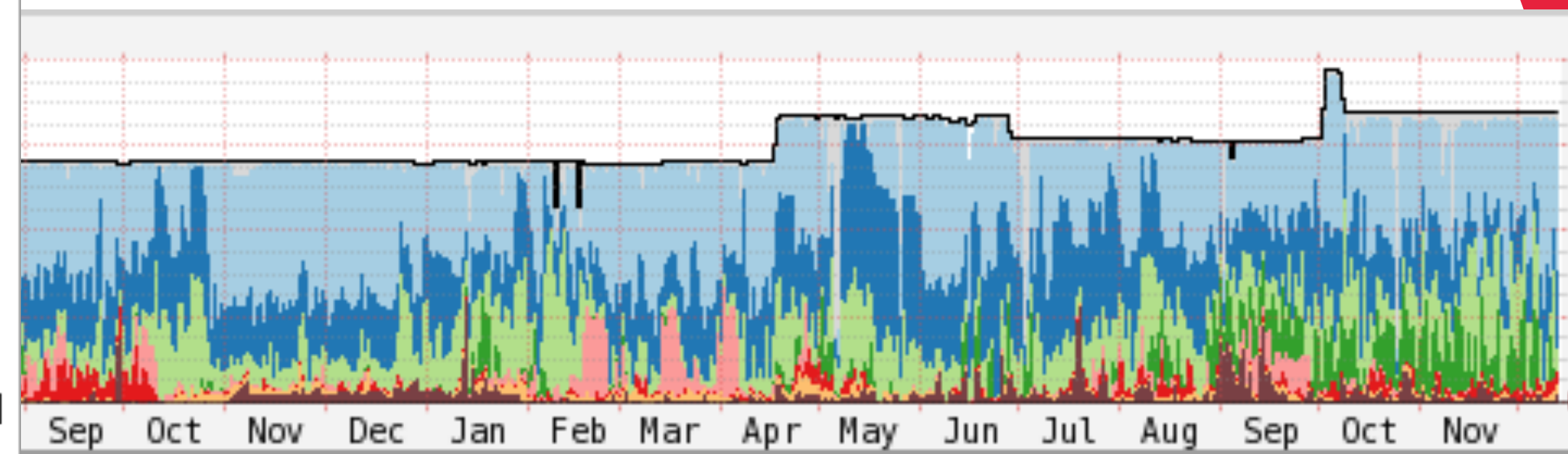
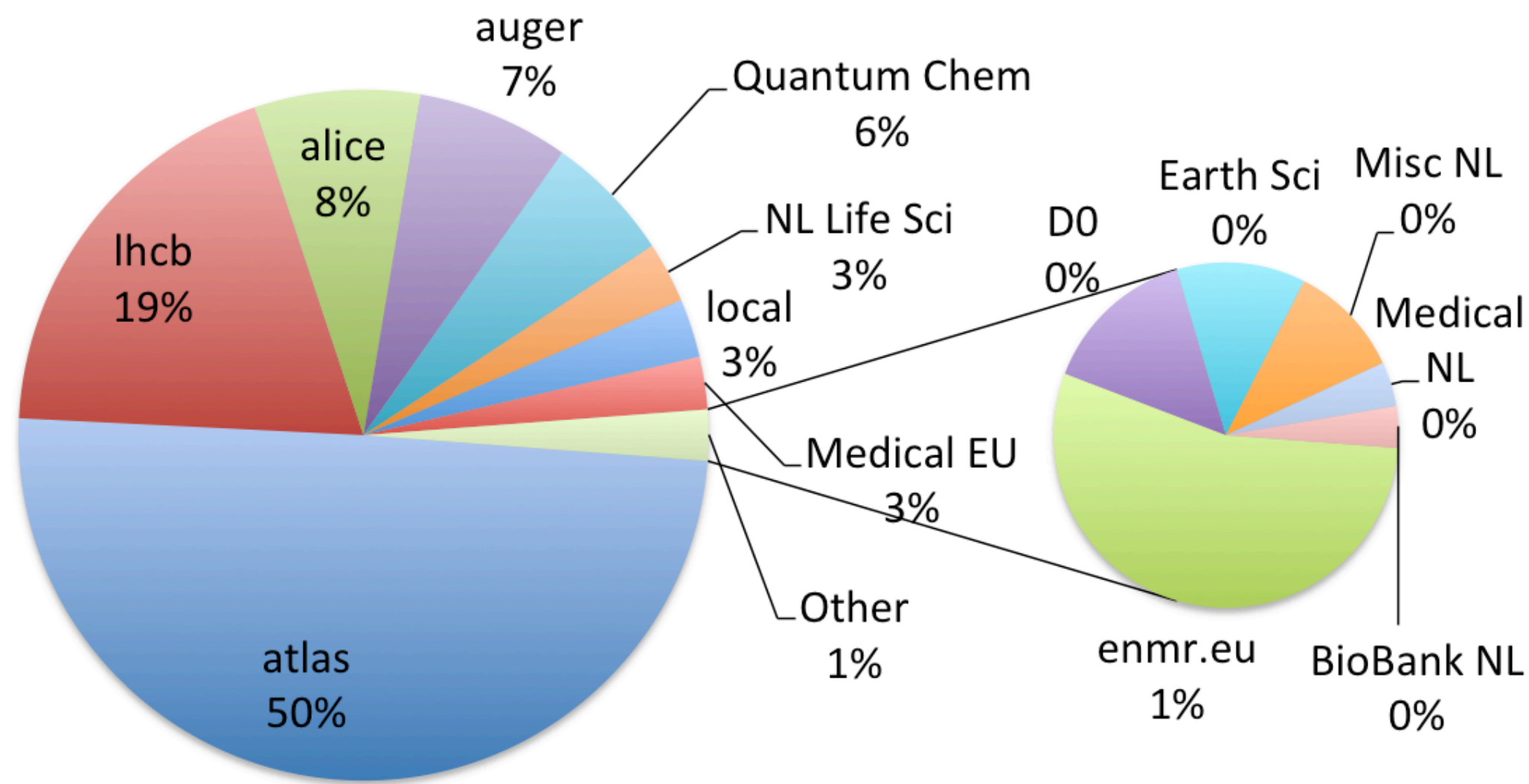




### Usage @ Nikhef from 2018-01-01 to 2018-12-14

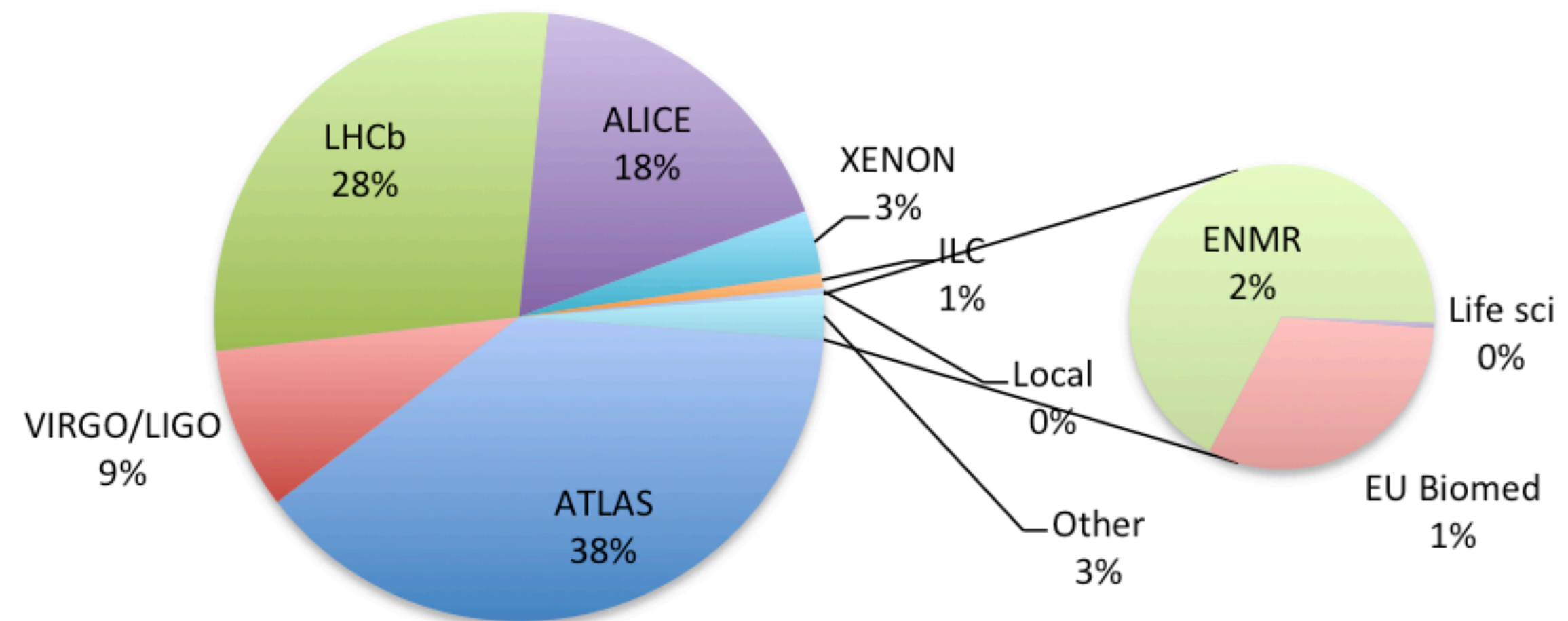


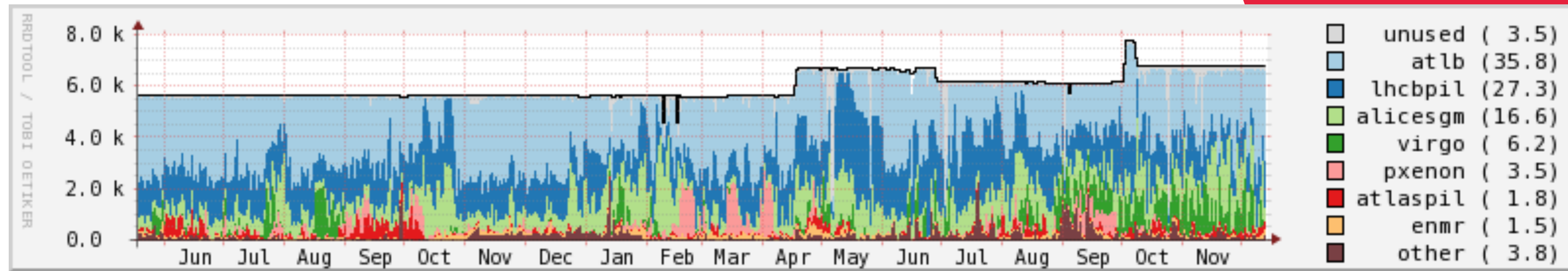
### Usage @ Nikhef from 2012-12-15 to 2013-12-15



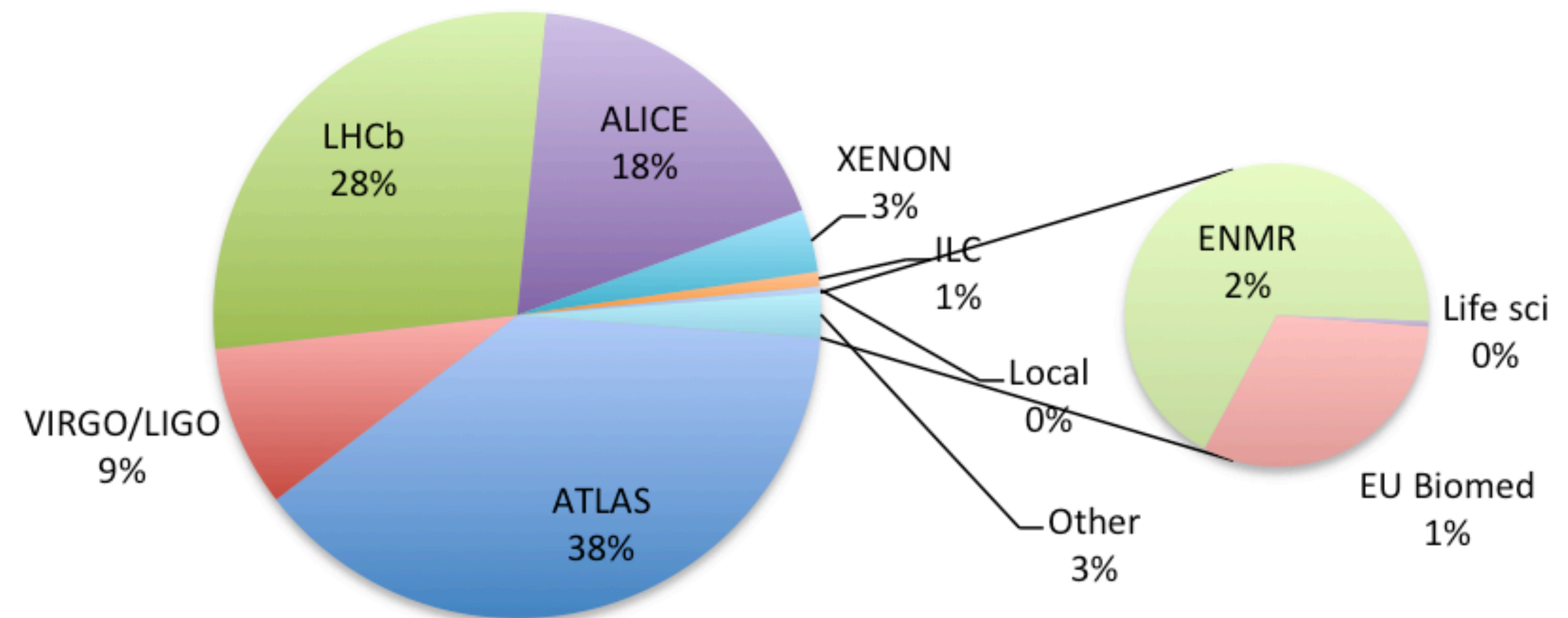
unused	( 3.5)
atlb	( 35.8)
lhcbpil	( 27.3)
alicesgm	( 16.6)
virgo	( 6.2)
pxenon	( 3.5)
atlaspil	( 1.8)
enmr	( 1.5)
other	( 3.8)

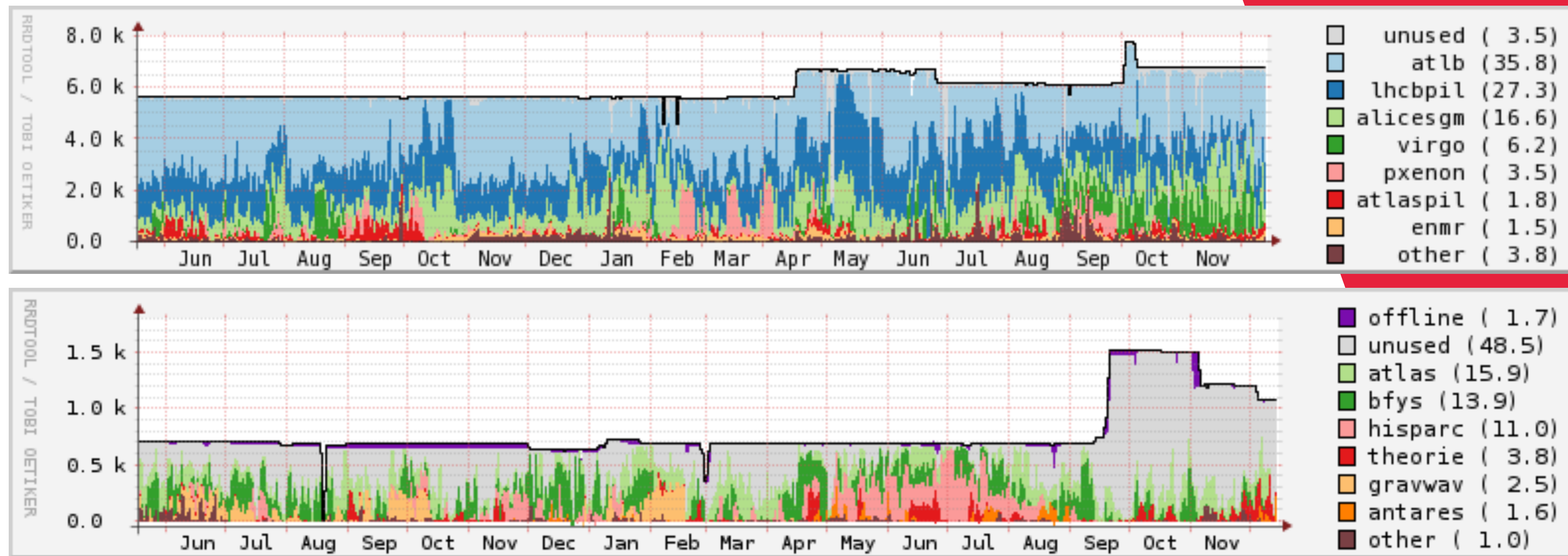
### Usage @ Nikhef from 2018-01-01 to 2018-12-14



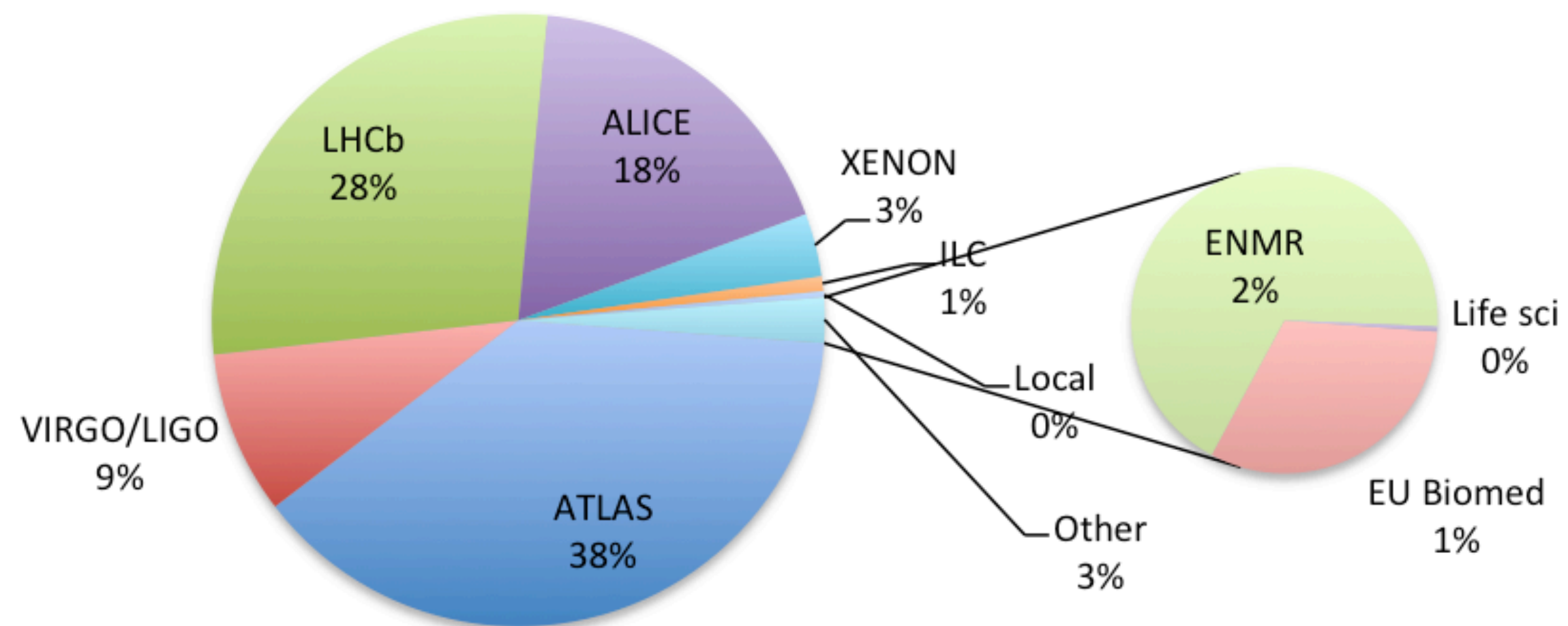


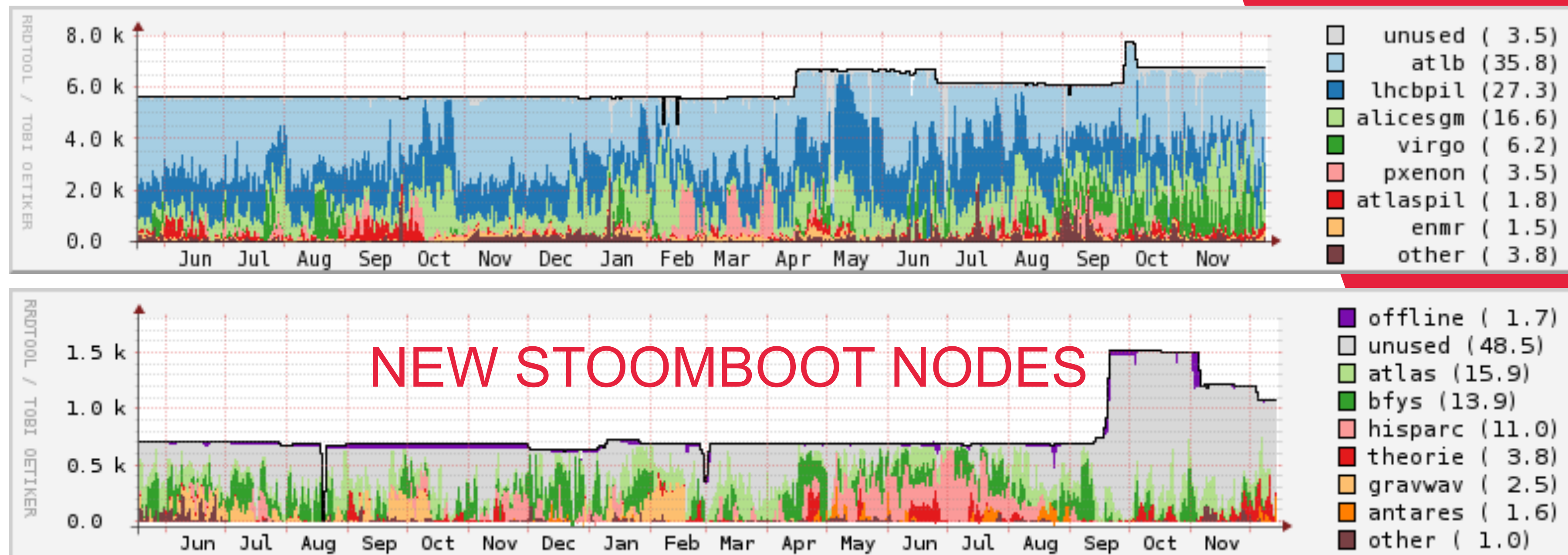
### Usage @ Nikhef from 2018-01-01 to 2018-12-14



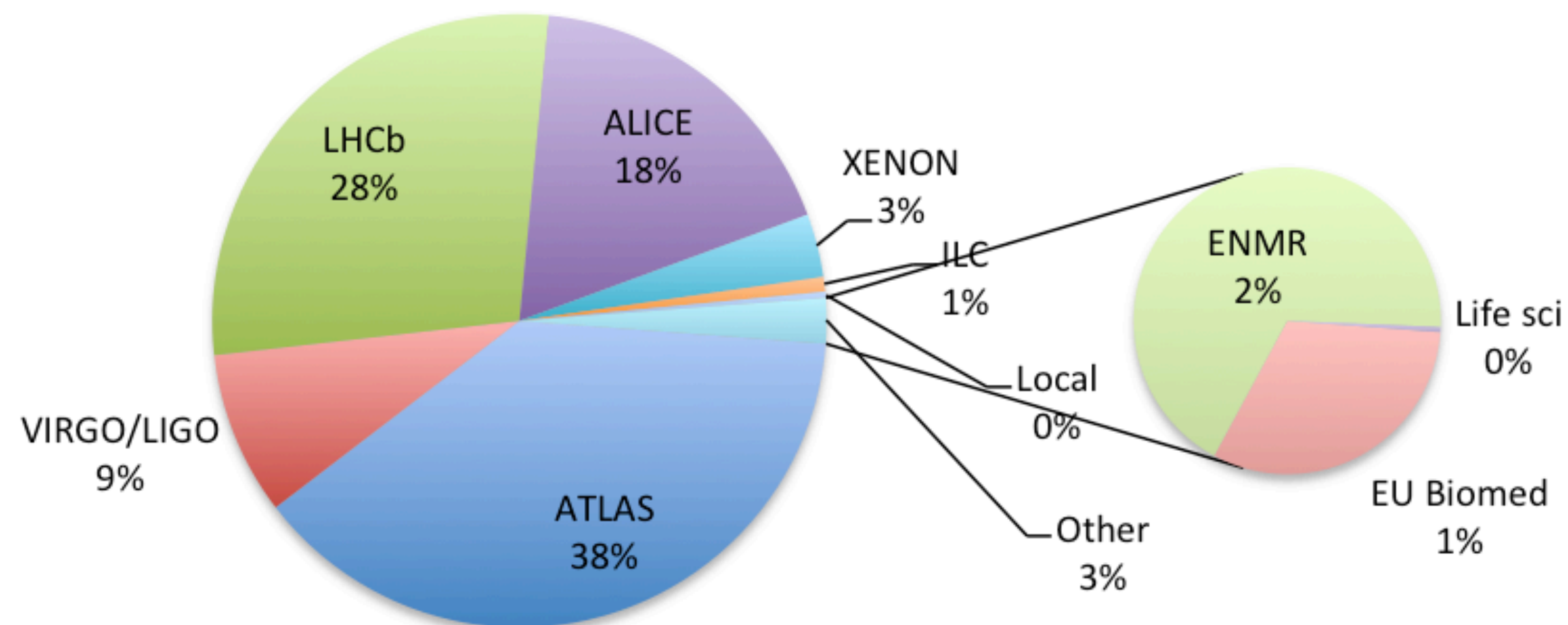


### Usage @ Nikhef from 2018-01-01 to 2018-12-14

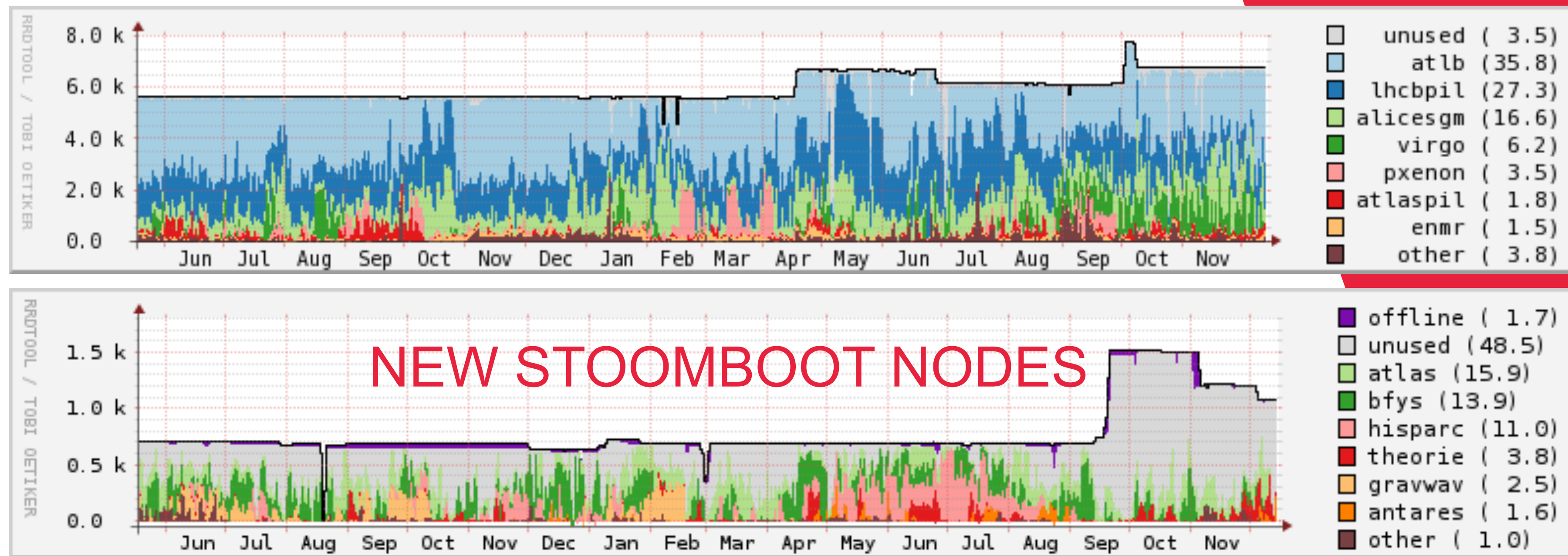




### Usage @ Nikhef from 2018-01-01 to 2018-12-14

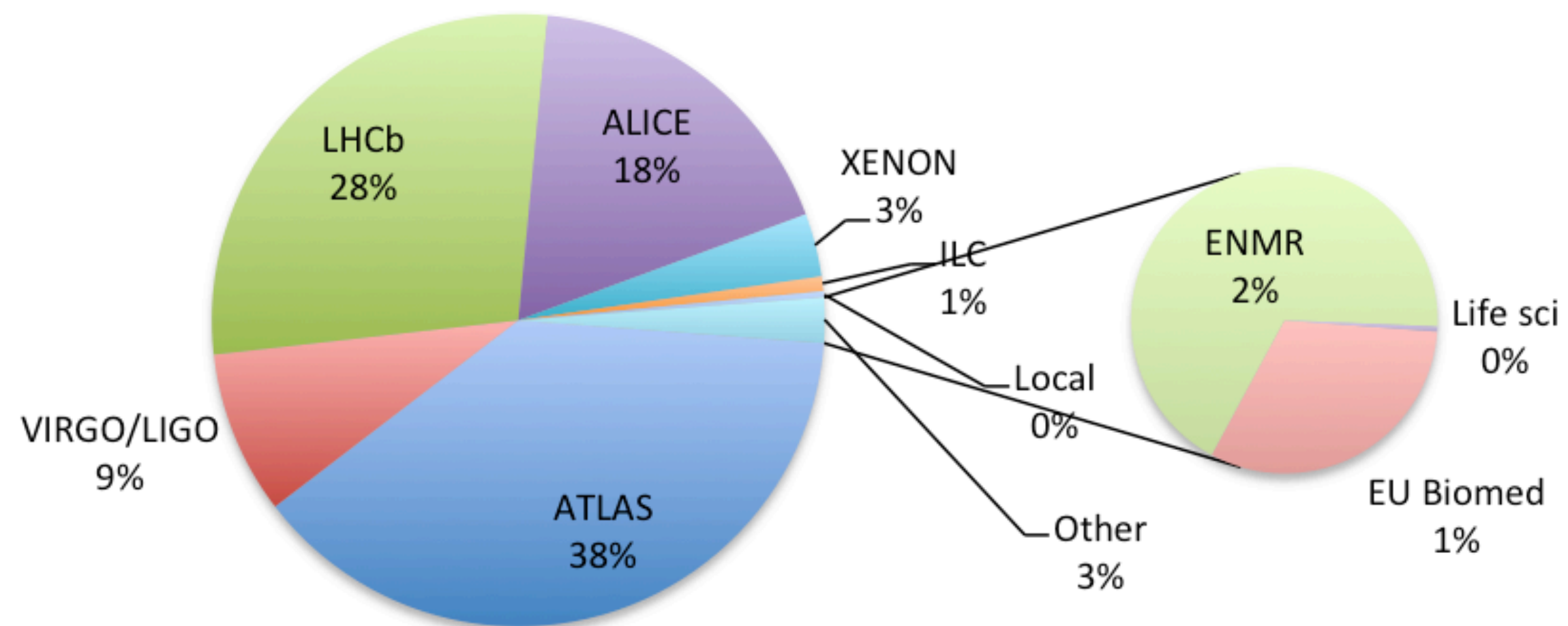






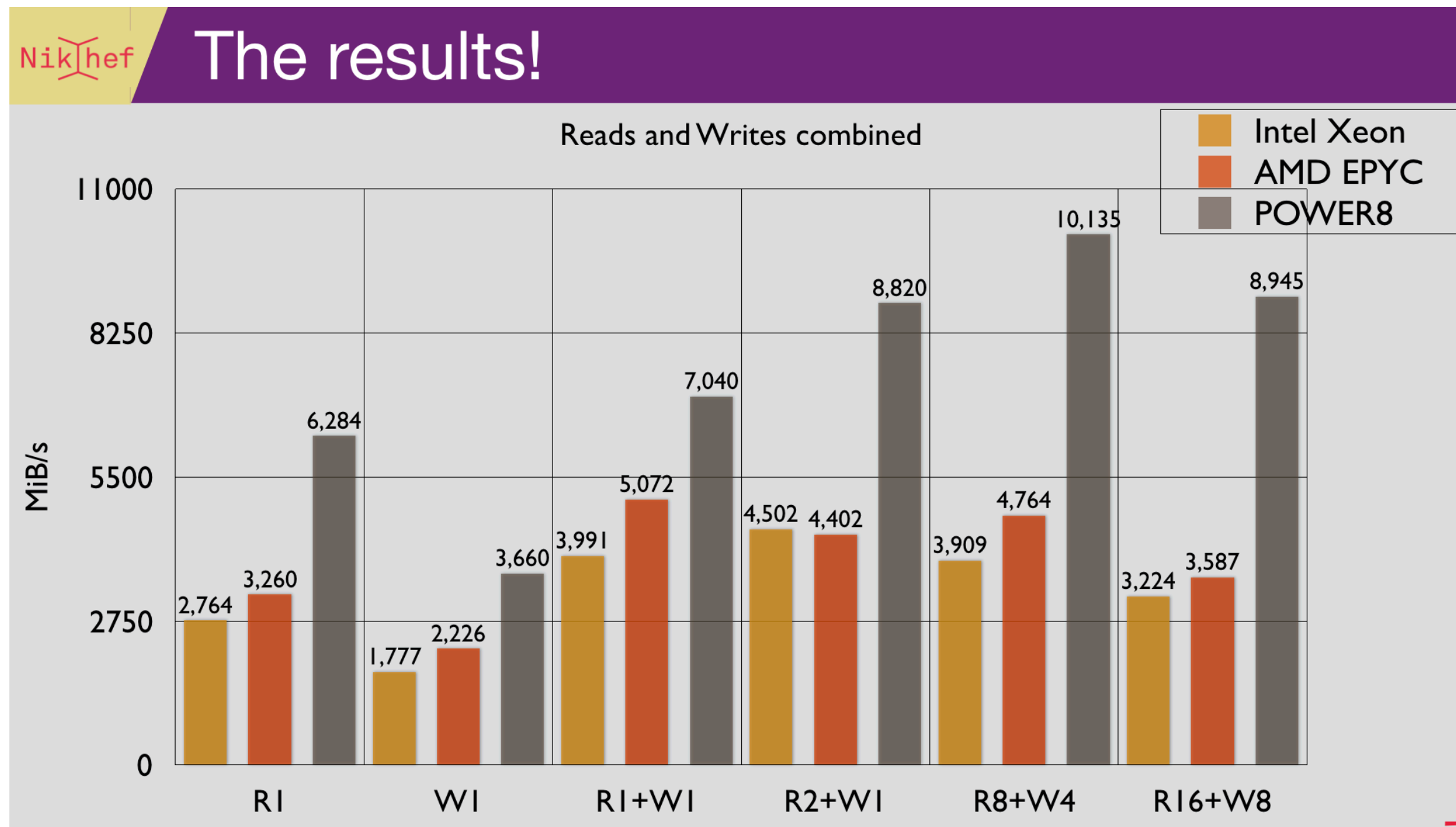
Usage @ Nikhef from 2018-01-01 to 2018-12-14

**NEW GPU NODES**



Nikhef

APOLOGIES :  
NO STOOMBOT HALL  
OF FAME WINNER



**Prototype Data Transfer Node**



AAC

RESOURCE  
LIMITED  
COMPUTING



NEWCOMER'S VIEW

I4C

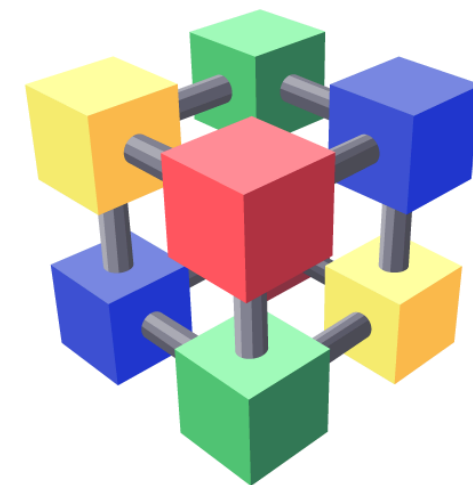
VIRGO

DUNE  
DEEP UNDERGROUND  
NEUTRINO EXPERIMENT

NWO



Xe  
XENON  
Dark Matter Project



WLCG  
Worldwide LHC Computing Grid



SURF SARA

Nikhef



EUDAT

ASTRON  
Netherlands Institute for Radio Astronomy

EOSC-hub

# OTHER STUFF

- computing course
- research integrity
- data management

# OUTLOOK

- Current program lines are the relevant ones  
*focus on present needs or problems*
- Grow NL-T1 (LHC) and VIRGO CC
  - funding proposal in 2019
  - recently joined DUNE Computing Consortium
  - also support XENON and KM3NeT
- R&D on Facilities (GPU, data bandwidth)
- R&D on sw (online reco, data compression)
- steady modernization of collaboration (sw) infra
  - without hooks of Google, Apple, Facebook, Amazon!

