

**European
GNURadio
Days 2024**
27th - 30th August
Darmstadt, Germany + 

Feedback & Wrap-Up

2024-08-30, Friday

- 7th instalment of European GNU Radio Days
- First time hosted outside of France, in Darmstadt, the "City of Science"
- Key event for the European Software-Defined-Radio community
 - focus on advancing SDR technology and fostering innovation
- **Special Theme: Launch of GNU Radio 4.0, bridging academia and industry**

110Ds
Darmstadtium
[279, 281]



About the Event & Venue

Tuesday
27th

Wednesday
28th

Thursday
29th

Friday
30th

Saturday
31th

Keynote #1
Eric Blossom
9:00-10:30

Keynote #2
Johan Messchendorp
9:00-10:30

Keynote #3
Josh Morman
9:00-10:30

Contributed Talks
Karakose, Koroglu
9:00-10:00

Coffee Break 10:30-11:00

Talk
Stadlmann
11:00-11:30

Contributed Talk
Weible
11:00-12:00

Contributed Talks
Friedt, Estévez
11:00-12:30

Guided Tutorials
developers
11:00-12:30

Lightning Talks
11:45-11:50

Lightning Talks
11:45-11:50

Lightning Talks
11:45-11:50

Lightning Talks
11:45-11:50

Lunch 12:30-13:30

Tutorial 1
GR 4.0 Concepts
13:30-15:00

Outreach
(public talks in German)
14:00-14:45

Lab-Tours
13:30-17:30

Tutorial 3 & 4
dev and non-dev
13:30-15:00

Guided Tutorials
developers
13:30-15:00

Tutorial 2
non-devs
15:30-17:00

developers
15:30-17:00

Guided Tutorials
developers
15:30-17:00

Guided Tutorials
developers
15:30-16:30

Social Dinner
on-site
18:00-21:00

Kalkofen
Beer Garden
18:00-21:00

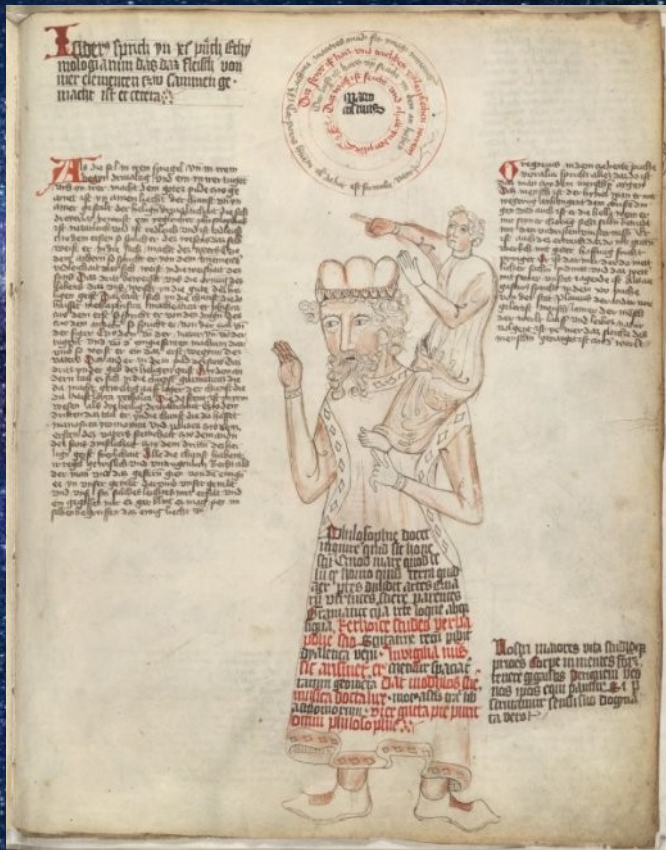


Feedback & Wrap-Up
16:30-17:30

Guided Tutorials cont'd
Committee Meetings,
Follow-Ups,
Discussions,
etc.
9:00-open-end

Program in detail:

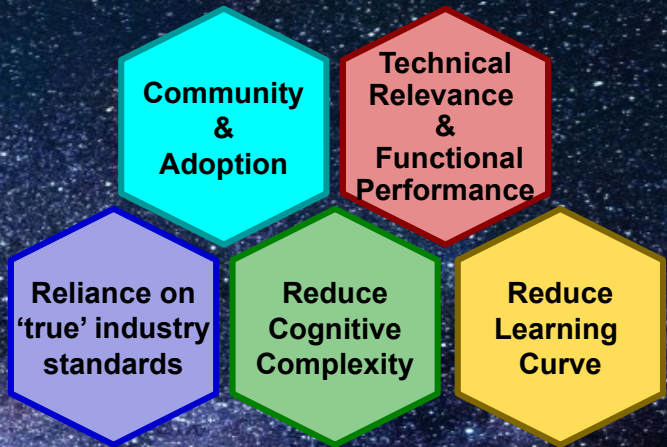




European
GNU Radio
 Days 2024

27th - 30th August
 Darmstadt, Germany +

... standing on the shoulders of giants!



GNU Radio 4.0 Modernisation Goals
 simplify onboarding for new contributors to participate/contribute more effectively



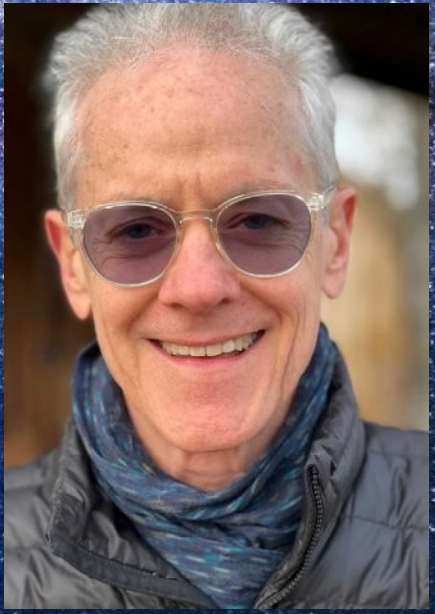
CONNECT
SHARE
COLLABORATE

... fostering the FOSS Community

Tuesday
27th

Keynote #1
Eric Blossom
9:00-10:30

Eric Blossom



Wednesday
28th

Keynote #2
Johan Messchendorp
9:00-10:30

Thursday
29th

Keynote #3
Josh Morman
9:00-10:30

Johan Messchendorp



Saturday
31th

Josh Morman



Keynote Speakers

A few ideas and questions

- How many people are currently contributing to the core of GNU Radio (3.10 and/or 4.0)?
- How many of them are being paid/incentivized somehow?
 - Part of their job
 - (Grad) Students
 - Consultant
 - etc.

Who are the GNU Radio Users?

Uses of GR in teaching / learning / research?

- Where? Who? What level?
- Number of educational grants that are somehow using GR (e.g., NSF in US)?
- PI or Co-PIs that we know are using GR
- ...

Continue to explore & understand where GNU Radio is being used.

Where is GNU Radio Used



Wireless Communications RADAR
 4G/5G/6G Radio Astronomy Spectrum Monitoring
 IOT and Sensors Space Comms !!Particle Accelerators!!
 Education Amateur Radio Physics Research
 Security Research Public Safety Citizen Science
 Transportation Recreation (CtF) Weather
 Medical RFML ...

THEME
 GNU Radio enables innovation in
 scientific applications

What will it take to facilitate/accelerate adoption



What is the effort involved in migration

- 1 - GRC-only Users
- 3 - OOT Developers
- 2 - GR Dependent Applications

Will OOT modules migrate?

- Lost a number of OOTs in 3.7 ... 3.10 transition

Even a small effort could be a dealbreaker for some.

my personal view



Johan Messchendorp



Pushing Boundaries:

Femtosec Research with Large-Scale Tech
(in accelerator-driven "nuclear" physics)

1. Evolution of femto-scale research fundamentally depends on **breakthroughs** in **computational technologies**.
2. Most of today's **computing innovations** are built on models and concepts **proposed already decades ago**.
3. **Online computing** is becoming **smarter** (online≈offline).
4. The application of ML/AI, and the role of open science has **attracted attention** over the past decade.
5. This interest is mostly driven by **funding opportunities** and the technological excitement.
6. Its **academic values** (e.g. impact on scientific advances) are yet **underestimated**, but will increasingly be recognised!



Pushing Boundaries:

Femtosec Research with Large-Scale Tech
(in accelerator-driven "nuclear" physics)

GNUradio?

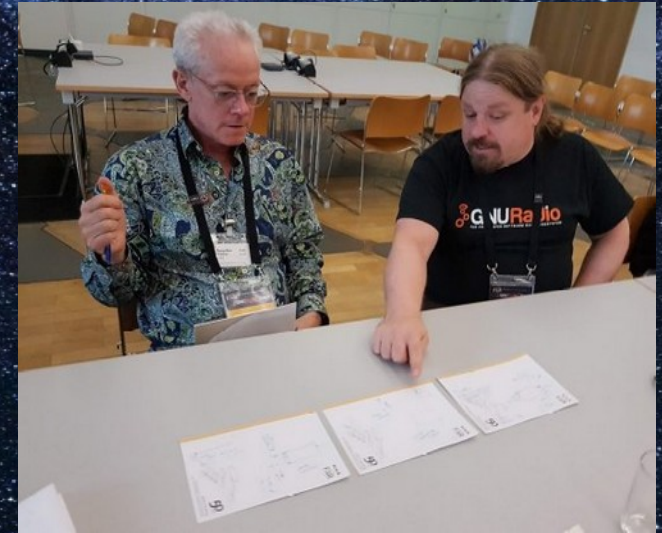
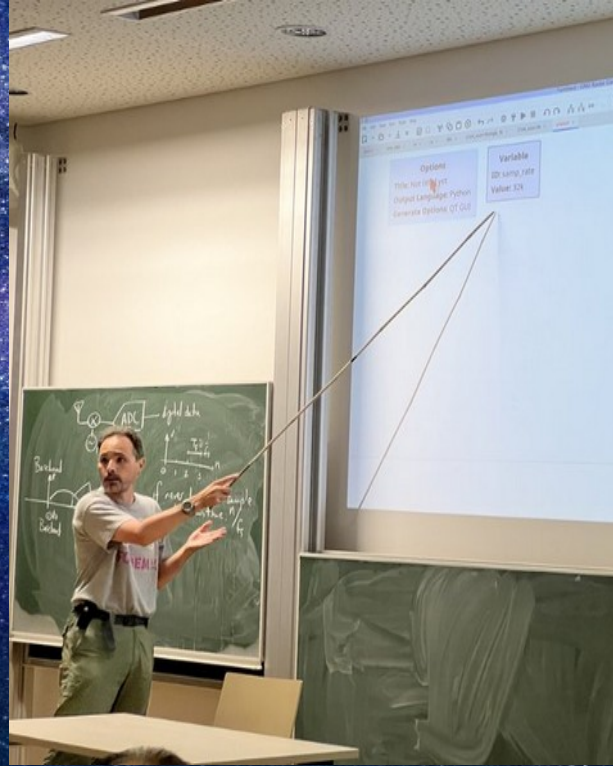
1. Well integrated in accelerator/ring activities at GSI/FAIR.
2. What about its usefulness in (large-scale) experiments?
3. Follow-up the recommendation of ChatGPT?
4. Role of ML & AI?
5. Suggestions?



New Users... Femtoscale (HEP, Nuclear) Research?!?



CONNECT
SHARE
COLLABORATE



Connect, Share, and Collaborate



Jean-Michel Friedt

Dr. Ivan Čukić

Dr. Matthias Kretz

Alexander Krimm

Dr. Semën Lebedev



std::simd



Tutorials



The Universe in the Laboratory

Tuesday
27th

Wednesday
28th

Thursday
29th

Friday
30th

Saturday
31th

Keynote #1 Eric Blossom 9:00-10:00	Keynote #2 Jonah Meeuschebak 9:00-10:00	Keynote #3 Josh Morman 9:00-10:30	Contributed Talks Karakose, Koroglu 9:00-10:00		
Coffee Break 10:30-11:00					
Talk Stadlmann 11:00-11:30	Contributed Talk Weible 11:00-12:00	Contributed Talks Friedt, Estévez 11:00-12:30	Guided Tutorials developers 11:00-12:30	Guided Tutorials cont'd Committee Meetings Follow-Ups Discussions etc. 9:00-open-end	
Lightning Talks 11:45-11:50	Lightning Talks 11:45-11:50	Lightning Talks 11:45-11:50	Lightning Talks 11:45-11:50		
Lunch 12:00-1:30					
Tutorial 1 GR 4.0 Concepts 13:30-15:00	Outreach (public days in Semmering) 14:00-14:45	Lab Tours 13:30-17:30	Tutorial 3 & 4 Dev and non-dev 13:30-15:00		
Tutorial 2 non-devs 15:30-17:00			Guided Tutorials developers 15:30-17:00		
Social Dinner on-site 18:00-21:00	Kalkofen Beer Garden 18:00-21:00		Guided Tutorials developers 15:30-16:30		
			Feedback & Wrap-Up 16:30-17:30		

Program in detail:



Contributed Talks

Programme



Tuesday
27th

Wednesday
28th

Thursday
29th

Friday
30th

Saturday
31th

Keynote #1 Eric Blossom 9:00-10:00	Keynote #2 Jonan Messchendorf 9:00-10:00	Keynote #3 Josh Morman 9:00-10:30	Contributed Talks Karaköse, Keçiglu 9:00-10:00	
Coffee Break 10:30-11:00				
Talk Stadmann 11:00-11:30	Contributed Talk Wielke 11:00-12:00	Contributed Talks Fraj, Belyuz 11:00-12:00	Guided Tutorials developers 11:00-12:30	
Lightning Talks 11:45-11:50	Lightning Talks 11:45-11:50	Lightning Talks 11:45-11:50	Lightning Talks 11:45-11:50	Guided Tutorials cont'd Committee Meetings Follow-Ups
Lunch 12:00-13:00				
Tutorial 1 GR 4.0 Concepts 13:30-15:00	Outreach (public days in Semmering) 14:00-14:45	Lab-Tours 13:30-17:00	Tutorial 3 & 4 Dev and non-dev 13:30-15:00	
Coffee Break 15:00-15:30				
Tutorial 2 non-devs 15:50-17:00			Guided Tutorials developers 15:50-17:00	
Social Dinner on-site 18:00-21:00	Kaffeehaus Beer Garden 18:00-21:00			



Lightning Talks
free-for-all, 5" each

- ... spontaneous,
- ... stimulating,
- ... entertaining,
- ...



[@europeangnuradiodays1445](#)
[@GNURadioProject](#)



<https://tinyurl.com/GRDays24>

Keynotes, Talks & Tutorials

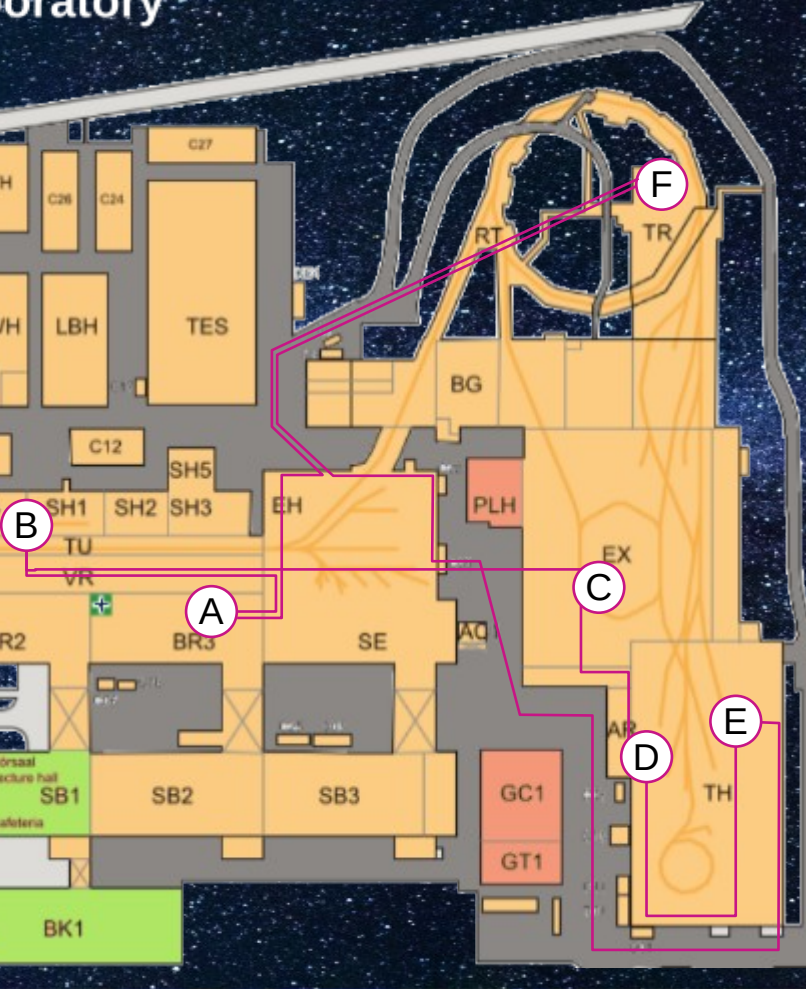
live-streamed & recorded
for posteriori

Photos & GDPR

please be respectful about
GSI/FAIR representation
& people's rights

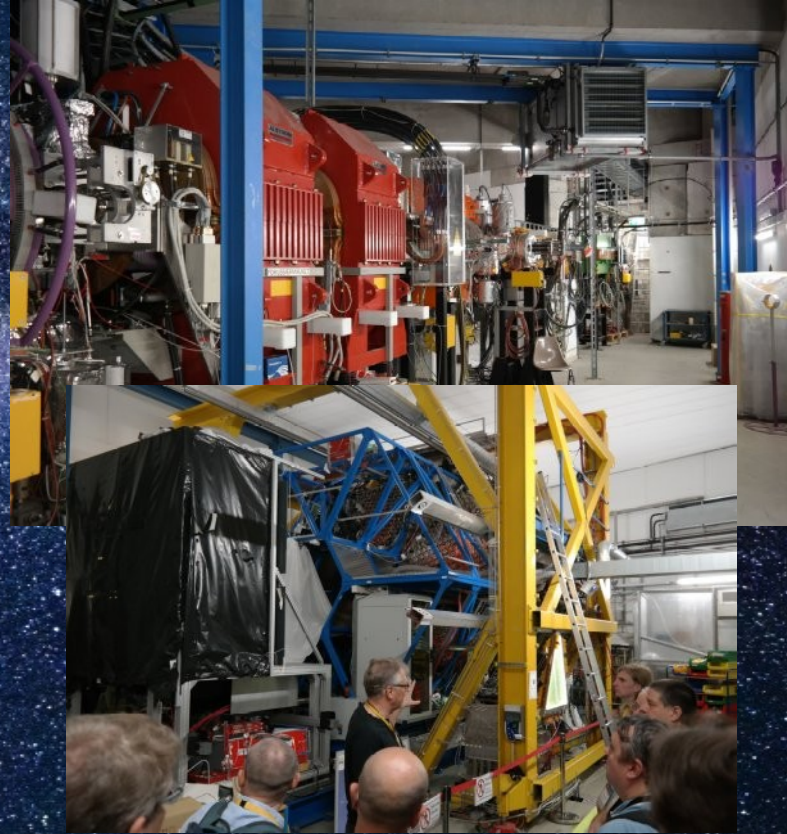
we will screen
& post links

Live-Stream, Recordings & Photos



- GSI-Tour (~1.5h):**
- A:** Main Control Room
 - B:** Unilac
(Universal Linear Accelerator)
 - C:** ESR
(Experimental Storage Ring)
 - D:** Medical Cave
(cancer treatment R&D)
 - E:** HADES
 - F:** FAIR Platform

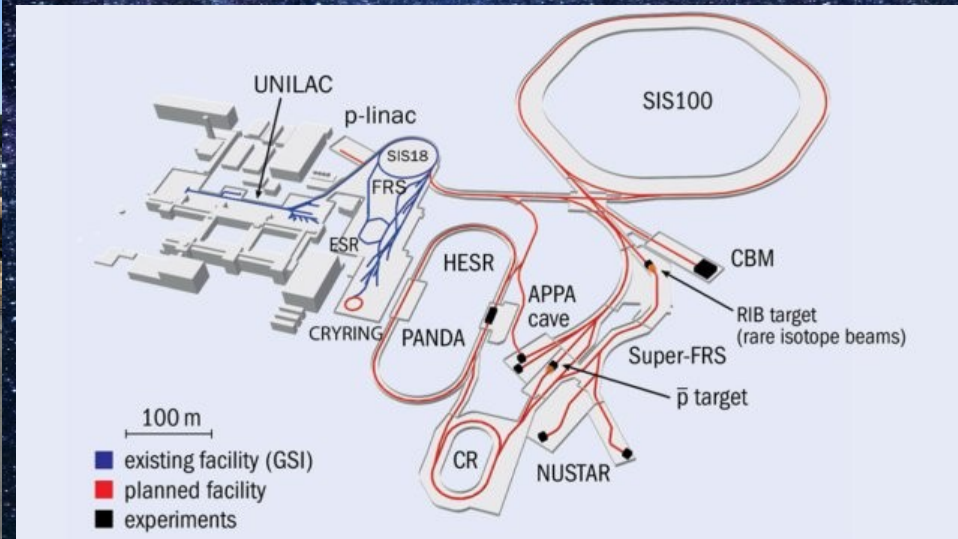
GSI Tour: Jens Stadlmann & Shahab Sanjari*



GSI Tour: Jens Stadlmann & Shahab Sanjari*



GSI Tour: Jens Stadlmann & Shahab Sanjari*



FAIR Tour: Niels Pyka & Daniel Severin



FAIR Tour: Niels Pyka & Daniel Severin



FAIR The Universe in the Laboratory
GNURadio 4.0 Days
27th - 30th August 2024

How to get to Kalkofen:

GSII/FAIR

Kalkofen
for one drink
28.08.2024

Kalkofen
for one drink
28.08.2024

Wednesday: Social Event @Kalkofen



FAIR The Universe in the Laboratory
GNURadio 4.0 Days

Maria Aguilera
organiser

femto-st xtim HELMHOLTZ
GSI FAIR



FAIR The Universe in the Laboratory
GNURadio 4.0 Days

Felix Dallmann

femto-st xtim HELMHOLTZ
GSI FAIR

FAIR The Universe in the Laboratory
GNURadio 4.0 Days

Nick Zobel

femto-st xtim HELMHOLTZ
GSI FAIR

Any Questions & Suggestions
→ please ask an Organiser



The Universe in the Laboratory



European GNU Radio Days 2024

27th - 30th August
Darmstadt, Germany + 

... GNU Radio stars at GSI/FAIR



Looking forward to the next



GNURadio

THE FREE & OPEN SOFTWARE RADIO ECOSYSTEM

Days 2025!



Thank you!