HSF/IRIS-HEP Python for Analysis Training

Jun 5, 2024

Instructors:	Mentors:	Local organising committee:
• Marta Czurylo • Jonas Rembser • Vincenzo Eduardo Padulano • Guillermo Fidalgo	• Tetiana Mazurets • Roy Cruz Candelaria • Alexander Moreno • Richa Sharma	• Richa Sharma • Sudhir Malik • Jim Pivarski • Lera Lukashenko • Holly Szumila-Vance • Alexander Moreno

If you aren't recording this on Zoom, enable captioning and start the recording ...

(just a reminder)

Everyone is Welcome

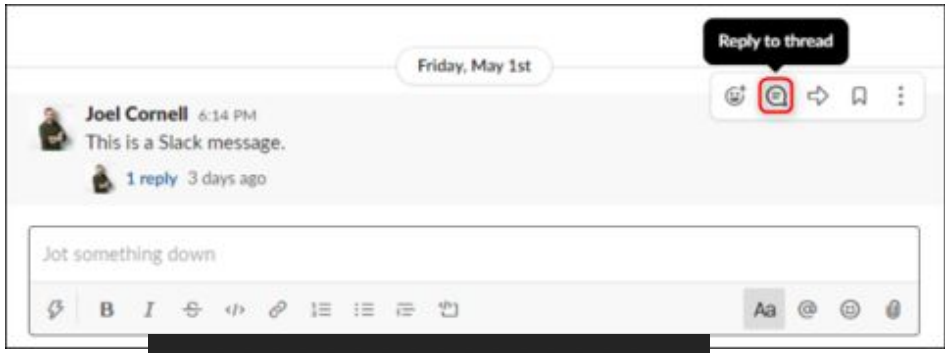
- You are physicists working in international collaborations. All of you should know this page:
  - The CERN code of conduct
- Built on a set of core CERN values →
- Taken together, provide the basis for respect: respect for others, respect for the organization and respect for its mission.

- We encourage a culture of openness where all contributors feel free to engage in the discussion.

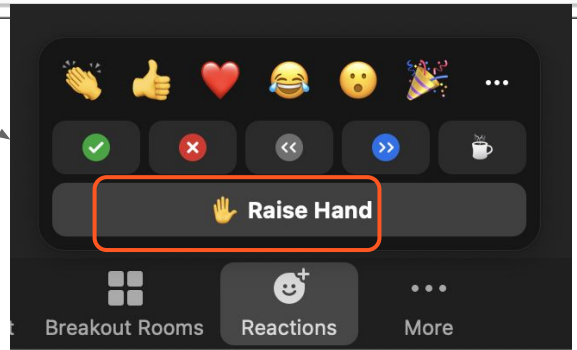
We are here to help!

- Please use the **Slack channel** for extended questions during the session (it's easier to keep track for us than the zoom chat)

Use the 'reply to thread' feature to keep everything sorted

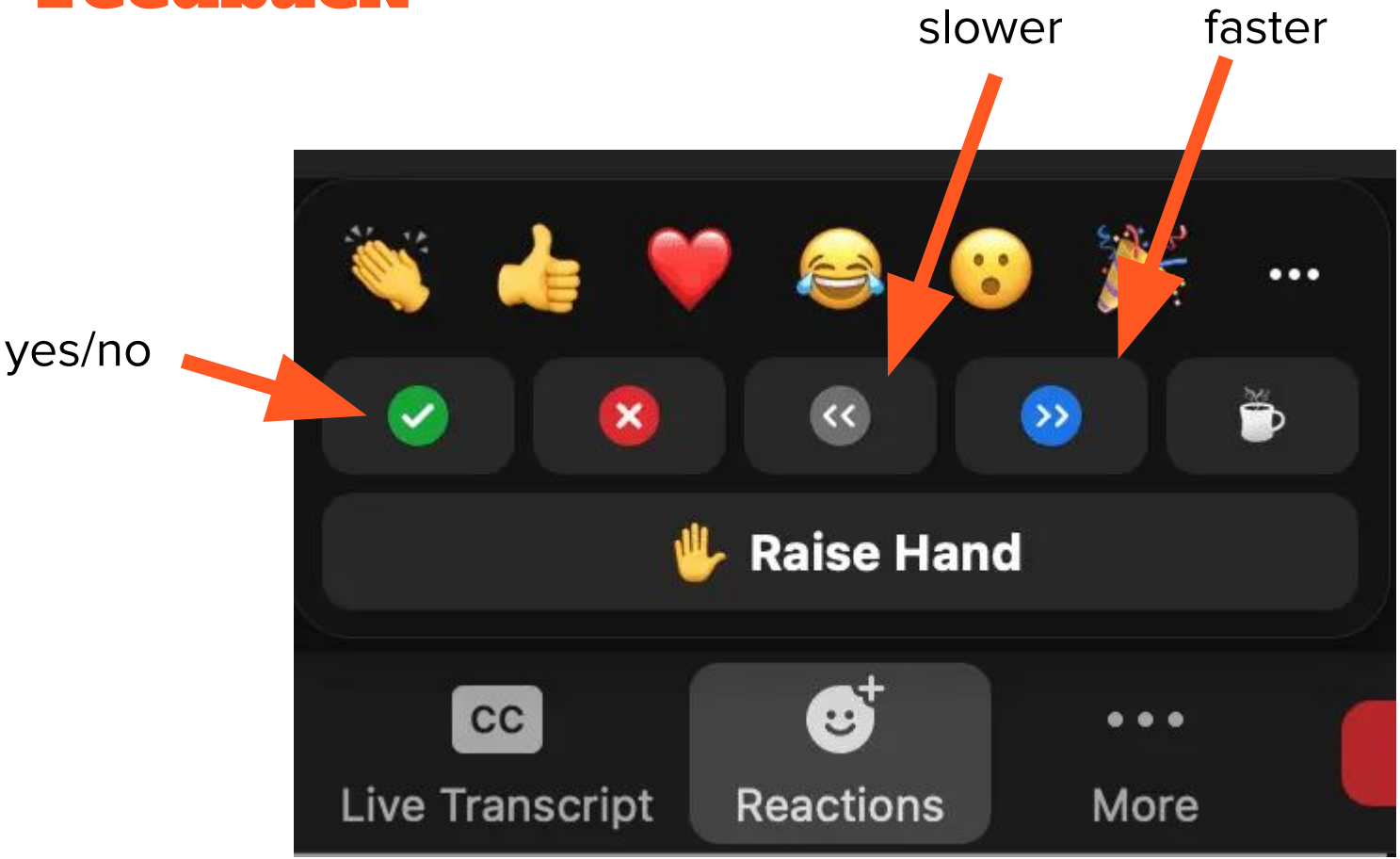


- Dedicated time for questions: Use the 'raise hand' feature to speak



There is no such thing as a "stupid question"!

Feedback


slower
faster
yes/no
Raise Hand
CC
Live Transcript
Reactions
More

If you haven't done yet...

[1] Join the Slack channel: invite

If you have troubles to join, let us know now.

[2] Follow the setup pages

- ROOT (setup)
- Scikit-HEP (setup)

Schedule

Welcome

Help with Setup
[8:00 ET]

Introduction & group picture
[8:15 - 8:30 ET]

ROOT in Python (PyROOT), ROOT in Jupyter
[8:30 - 9:30 ET]

Break
9:30-9:50

Histograms, graphs and basic I/0
[9:50-10:50 ET]

Break
10:50-11:10

RDataFrame
[11:10-12:00 ET]

Lunch Break
12:00-13:15

Scikit-HEP 1
[13:15-14:35 ET]

Break
14:35-14:55

Scikit-HEP 2
[14:55-16:15 ET]

Meet your instructors!

Marta Czurylo

Particle Physics PhD,
Fellow at ROOT team

My research:
ROOT RDataFrame R&D,
ATLAS diHiggs analysis: HH → 4b (PhD)

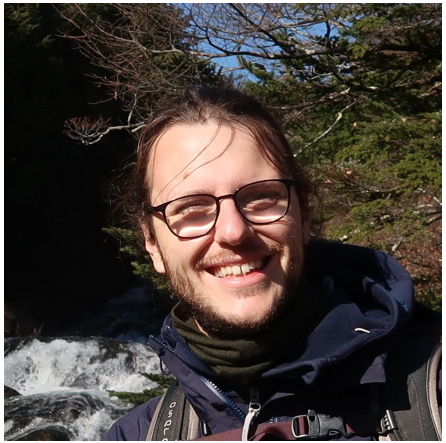
My expertise is:
HEP Data analysis, ROOT

A problem I'm grappling with:
Improved user experience with Distributed RDataFrame

I've got my eyes on:
Improving analysts experience with RDataFrame

I want to know more about:
Advanced C++, distributed computing

ROOT
Data Analysis Framework



Jonas Rembser

Scientific Software Developer at CERN

My research:
ROOT / RooFit R&D / PyROOT
Statistical analysis in HEP

My expertise is:
HEP Data analysis, ROOT

A problem I'm grappling with:
Making RooFit ready for more data and more complex analyses

I've got my eyes on:
GPUs and Automatic Differentiation

I want to know more about:
New Programming languages like Julia and Rust

ROOT
Data Analysis Framework

Vincenzo Eduardo Padulano

Computer Science PhD,
Staff Computing Engineer @ CERN

My research:
ROOT R&D
(RDataFrame, RNTuple, Python)

My expertise is:
Distributed computing and data analysis interfaces

A problem I'm grappling with:
Making ROOT ready for the next-generation HEP challenges

I've got my eyes on:
Improving analysts experience with RDataFrame

I want to know more about:
User workflows and programming patterns

ROOT
Data Analysis Framework

Guillermo Fidalgo Rodríguez

Masters Student in Physics
University of Puerto Rico - Mayagüez
gfidalgo@cern.ch

My research:
Analysis on Exotic Physics: Emerging Jets.
I do Machine Learning for DQM Studies for the CMS Tracker.

My expertise is:
Using python for ML Studies

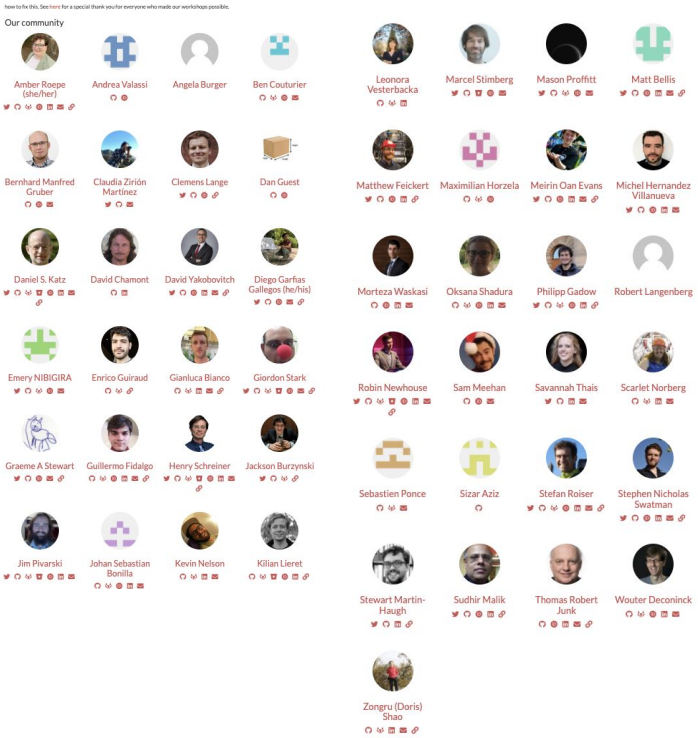
A problem I'm grappling with:
Oversubscribing

I've got my eyes on:
A PhD.

I want to know more about:
C++, Arduino, Distributed computing

HSF Educator/Mentor community

https://hepsoftwarefoundation.org/training/educators.html



- **Join our hackathons**
  - **In 1 or more topics**
- **Join our community**
- **Become training Educator**
  - **a mentor, facilitator, instructor**
- **Open a PR for any of our modules**

Group picture!