FAST-RA1 Tutorial

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Plan for the Afternoon

Overview of FAST-RA1

Trees → Dataframes

Dataframe manipulation

Dataframes → Datacards

Goals for Today

Train you lot up

Release the alpha version of FAST-RA1

Agree work tasks for everyone

Identify areas that still need improvement

FAST vs FAST-RA1

FAST

- The group of us that have been meeting to investigate new tools for analysis
- Several activities beyond today's work
- See more: FAST Objectives and Overview (Google Doc)

FAST-RA1

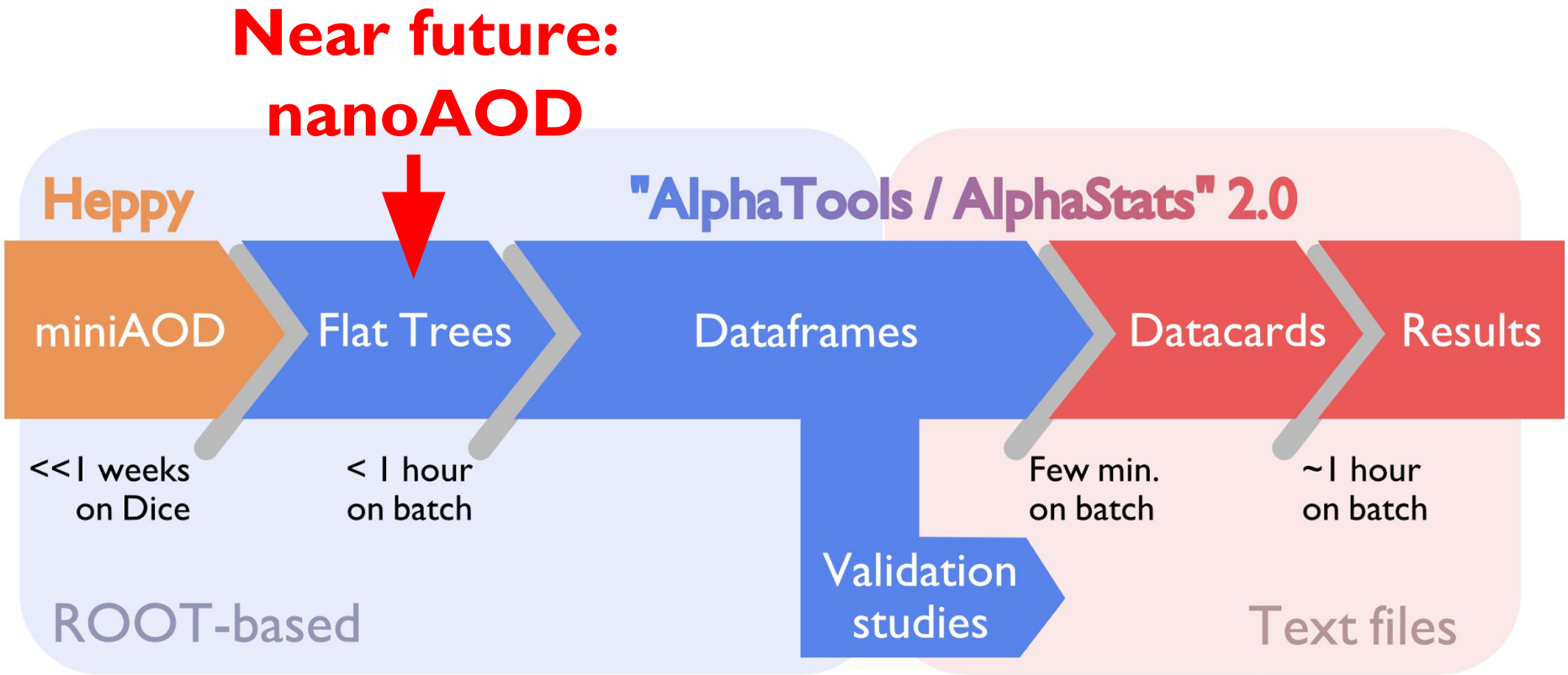
- FAST's first concrete binned analysis framework
- Puts Pandas at its core
- Currently: re-implementing RA1 analysis
- Long-term: break out general code → a generic FAST framework

FAST-RA1 is very fresh!!

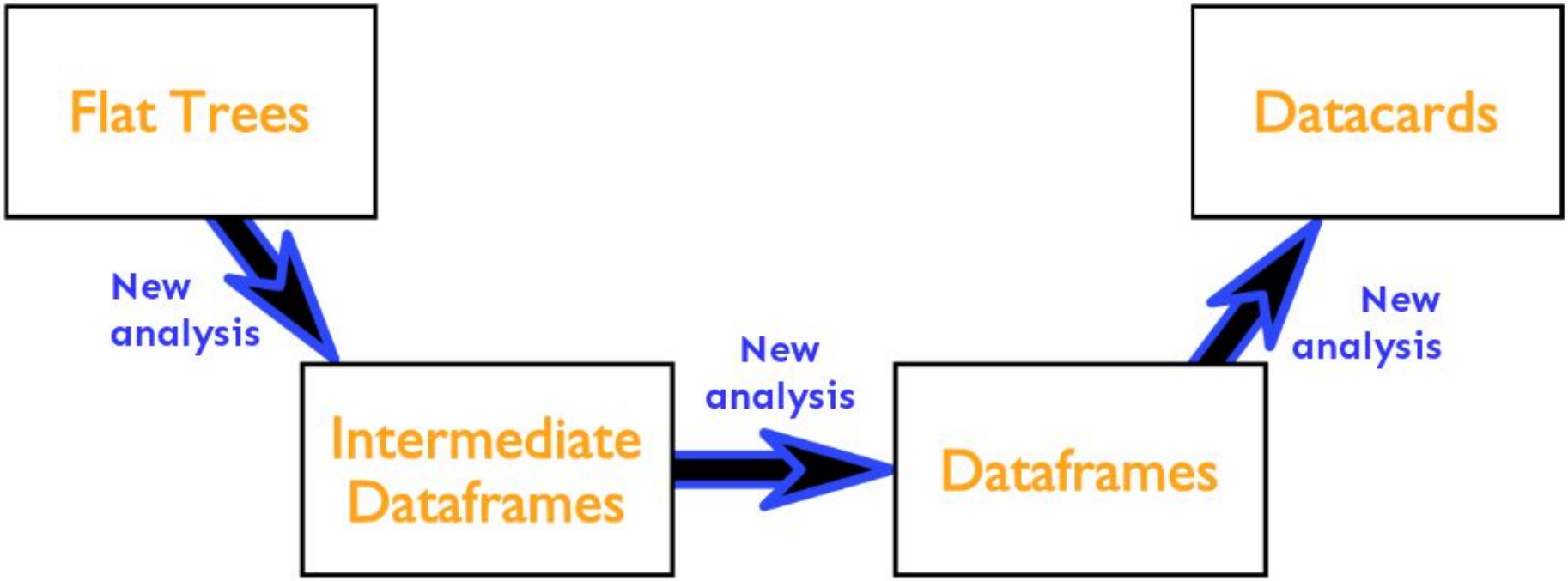
- Likely bugs and issues
- Not complete analysis yet
- That’s where you lot come in

FAST analysis layout

The FAST binned analysis pipeline



FAST-RA1's Structure



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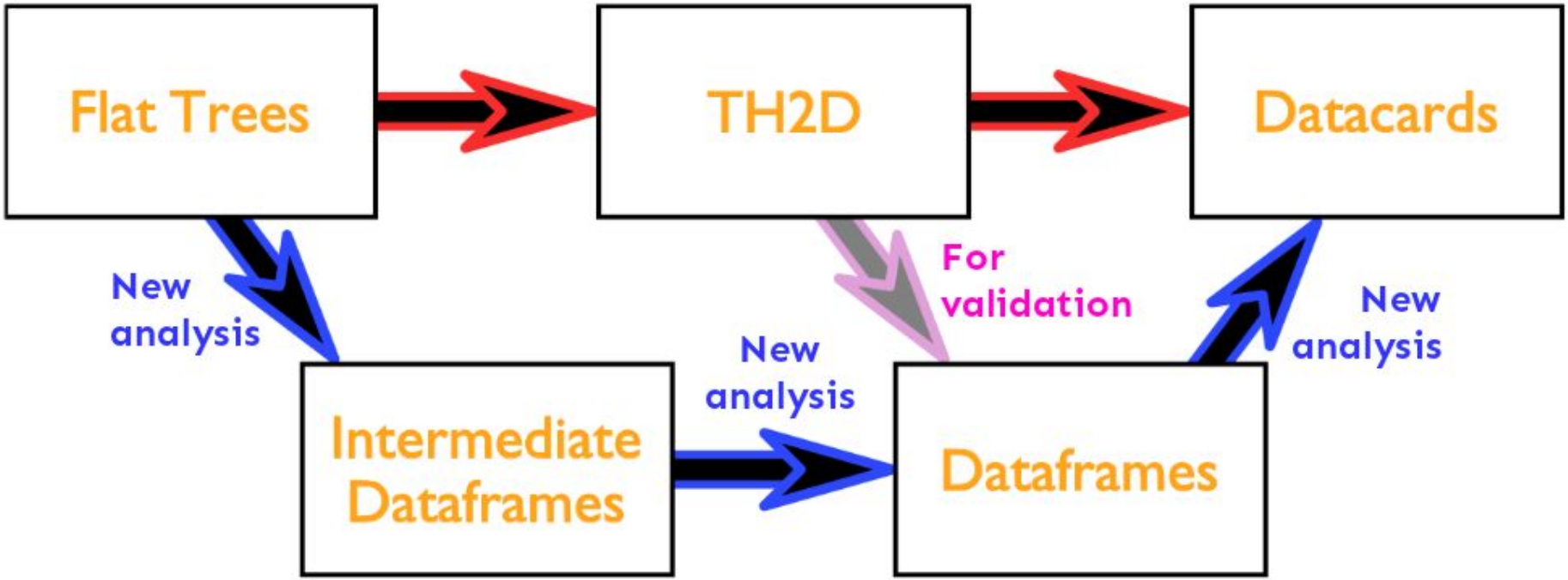

Developing for FAST-RA1

- Merge requests on GitLab
  - *FAST-RA1 is private, forks private too*
- We want to keep code neat, up-to-date and re-usable
  - *Continuous integration*
  - *Unit tests*
  - *Integration tests -- coming soon*
- Style guide stick to pep8
  - *May become strongly enforced in future*

Rest of the session

Program:

- General Pandas overview
- Running “Trees to dataframes” and AlphaTwirl
- Dataframe manipulation and “Dataframes to datacards”

Working and instructions

Online documentation

Not the final URL for FAST-RA1 documentation
https://test-linacre.web.cern.ch/test-linacre/_build/html/index.html
Current links on indico page

Ideally all work on lxplus

Pandas tutorial can use notebook or terminal
FAST-RA1 stuff only via terminal

Input files and dataframes

Trees_to_dataframes

Input trees:

`/afs/cern.ch/work/b/bkrikler/FAST/trees`

Intermediate dataframes:

`/afs/cern.ch/work/b/bkrikler/FAST/t2df_demo_dataframes`

Dataframes_to_datacards:

`/afs/cern.ch/work/d/davignon/public/FAST-RA1`

Accessing Gitlab

- Hosted at CERN: Use your cern account
- Repository url:
  - From lxplus can use kerberos to authenticated => just log in to lxplus and can run
  - From elsewhere use ssh or https
- Ssh keys:
  - https://gitlab.cern.ch/profile/keys
  - https://gitlab.cern.ch/help/ssh/README

Any Questions?