Overview and Organisation of the Hands-On Sessions

6 Tutorials at BTTB6
on Thursday afternoon

Tools for your test beam and you

Taking Data / Simulation   Analysis   Publication

MIDAS

AllPix^2

Proteus

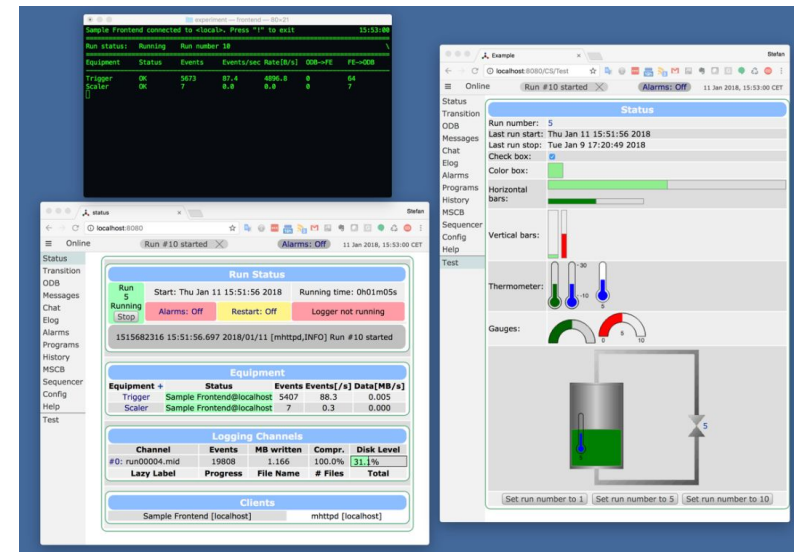**EUTelescope (Scattering)**

Timing Algorithms

Presentation Skills

The **MIDAS** data acquisition system for Test Beams by Stefan Ritt

Contents

- short demonstration of **installation**
- basic overview of the components and concepts
- application to test beams
- event-based data acquisition and slow control
- data visualization and web-based user interface

Possible preparation

- MIDAS documentation: https://midas.triumf.ca/MidasWiki/index.php/Midas_documentation
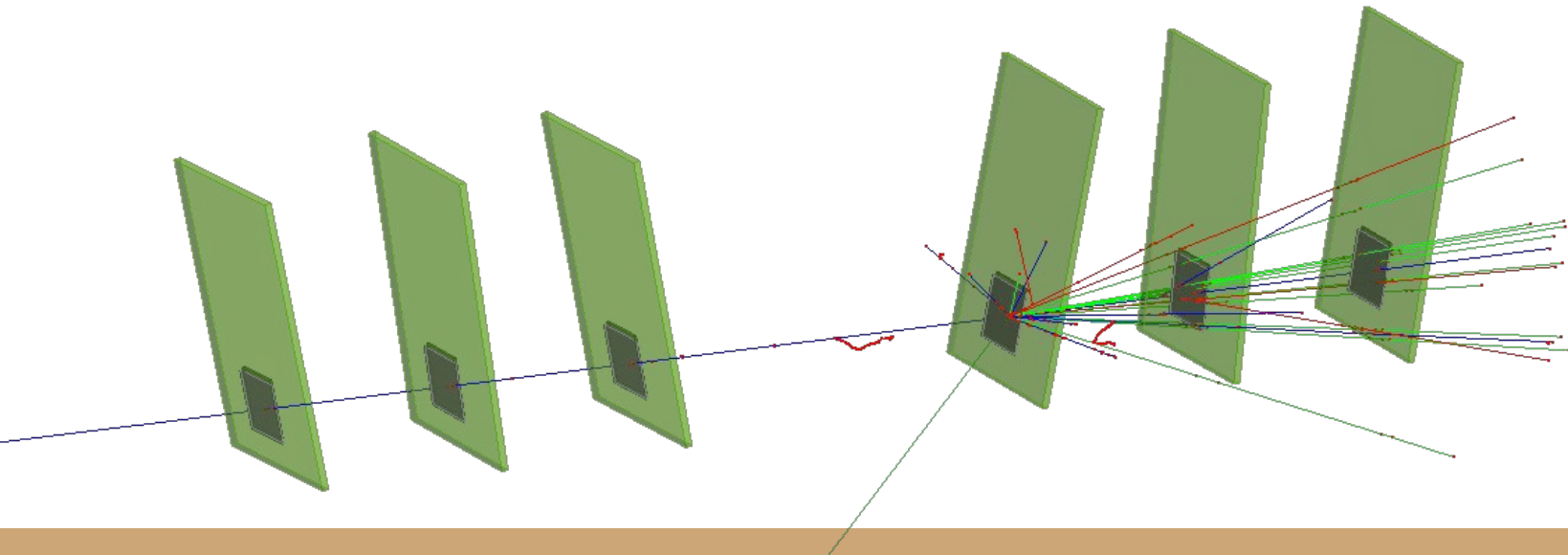
Allpix² Simulation Framework
by Simon Spannagel

Contents

- introduction to the Allpix Squared simulation framework
- walk-through the examples
- set up your own telescope-plus-DUT simulation

Recommended Preparation

- Installation of the latest version (v1.1.0) on your computer or remote machine: https://cern.ch/allpix-squared
- CVMFS version available

# The **Proteus** Reconstruction Software by Moritz Klein

Contents

- analysis flow from raw hit data to reconstructed tracks
- basic efficiency measurements using an example dataset

Recommended preparation

- Installation on local computer or on CERN lxplus machines
- Instructions: https://gitlab.cern.ch/unige-fei4tel/proteus
- Requirements ROOT and a C++11 compatible compiler

```
0xfa34 0xffaa
0x12ea 0x4223
0xabcd 0xfedc
0x00ff 0xff00
...
```
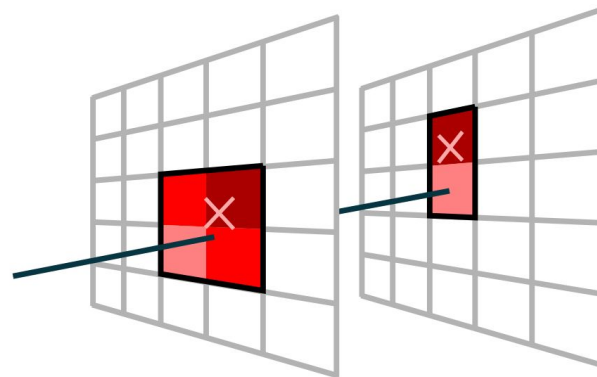
Raw data ⟶ Fully reconstructed events
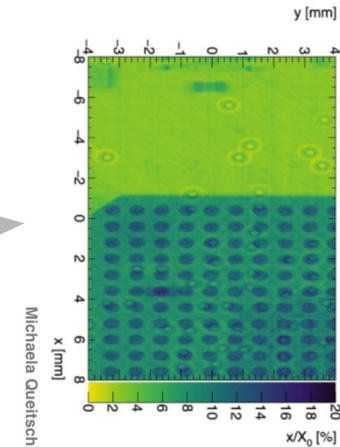
Scattering Images using **EUTelescope**
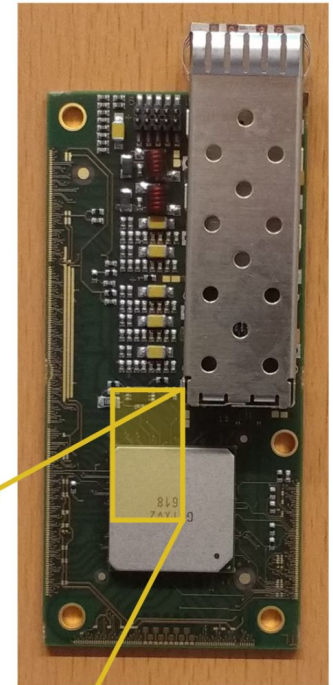# by Michaela Queitsch-Maitland
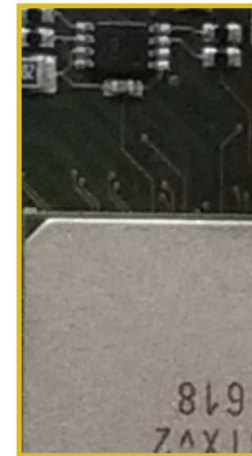
Contents

- brief overview on EUTelescope
- analysis flow from raw hit data to a scattering image
- using a "noDUT" dataset

Recommended preparation

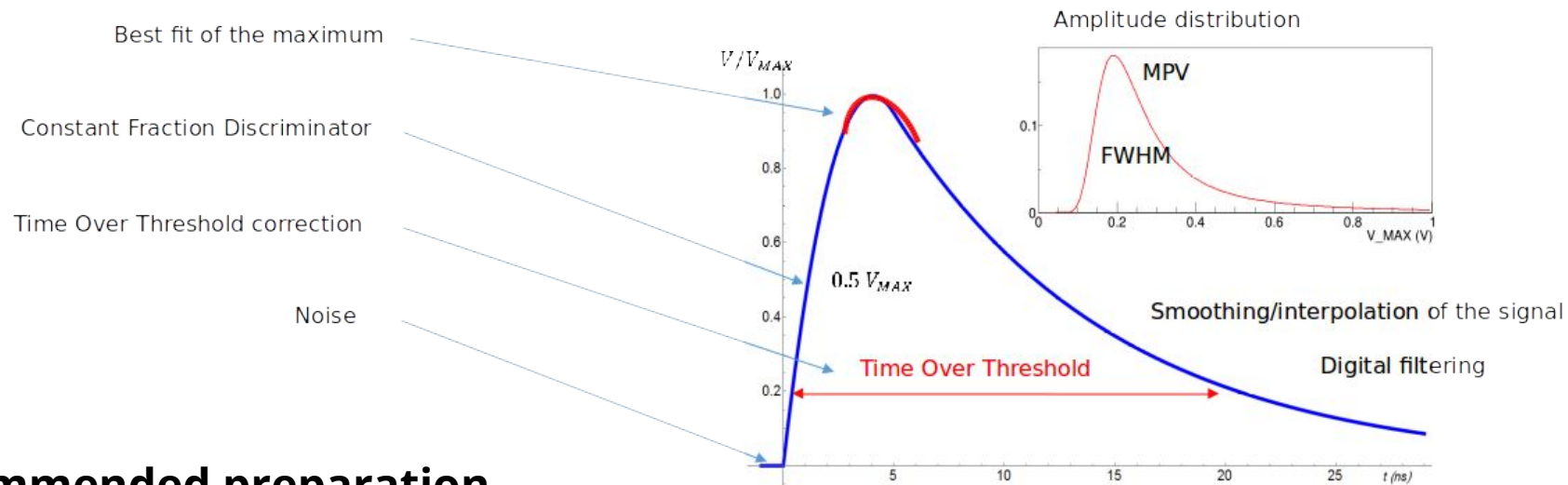- Reference:
  http://eutelescope.web.cern.ch/

Michaela Queitsch-Maitland | Radiation length measurements with testbeam | 30.11.2017

Timing: Measurement of time of arrival by Nicola Minafra (nicola@cern.ch)

Contents

- computing the arrival time using sampled signals
- comparison between different algorithms

Recommended preparation

- laptop, C++ knowledge
- (any) installation of ROOT

Making the most of your 10 minutes of fame
Presentations Skills by David Barney

Contents

- identifying some simple but effective methods of improving presentations and posters
- hands-on activities to reinforce concepts

Recommended (mental) preparation

- your own laptops
- be prepared to share your work with fellow participants

a different example...

> ### Review of Test Data Indicates Conservatism for Tiles Penetration
>
> - The existing SOFI on tile test data used to create Crater was reviewed along with STS-107 Southwest Research data
>   - Crater overpredicted penetration of tile coating significantly
>   - Initial penetration to described by normal velocity
>   - Varies with volume/mass of projectile.g. 200ft/sec for 3cu. In)
>   - Significant energy is required for the softer SOFI particle to penetrate the relatively hard tile coating
>   - Test results do show that it is possible at sufficient mass and velocity
>   - Conversely, once tile is penetrated SOFI can cause significant damage
>   - Minor variations in total energy (above penetration level) can cause significant tile damage
>   - Flight condition is significantly outside of test database
>   - Volume of ramp is 1920cu in vs 3 cu in for test

Thank you for your attention!!!.

You can attend up to TWO tutorials

13:00	**Hands-On: Scattering Images using EUTelescope**	**Hands-On: Making the most of your 10 minutes of fame** *Dr. David BARNEY*	**Hands-On: The Proteus Reconstruction Software** *Dr. Moritz KIEHN*
14:00			
	ETH HG E 33.3, Zurich, Switzerland	*ETH HG E 33.1, Zurich, Switzerland*	*ETH HG E 33.5, Zurich, Switzerland*

Coffee break

ETH HG E 1.2, Zurich, Switzerland   14:45 - 15:15

15:00	**Hands-On: Measurement of time of arrival** *Mr. Nicola MINAFRA*	**Hands-On: The MIDAS data acquisition system for Test Beams** *Stefan RITT*	**Hands-On: The Allpix Squared Simulation Framework**
16:00			
	ETH HG E 33.5 15:15 - 17:00	*ETH HG E 33.3* 15:15 - 17:00	*ETH HG E 33.1* 15:15 - 17:00

17:00