

7th Beam Telescopes and Test Beams Workshop



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Hands-On: The Corryvreckan reconstruction software

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Corryvreckan is a data reconstruction software developed for test beam data analysis. This tutorial will guide you through the framework of Corryvreckan and what functionality it possesses. You will learn how to configure your analysis, obtain result plots for your devices under test, and how to monitor your data quality during data taking. Some of the unique features of Corryvreckan will also be utilised, such as 4D tracking, and by the end you will be able to confidently use the modular framework to analyse your data from a variety of different test beam configurations. Only a basic knowledge of C++ and an installation of Corryvreckan are required for the tutorial.

Data for the Tutorial

```
wget https://cern.ch/corryvreckan/data/tutorial_data.tar.gz
tar -xvf tutorial_data.tar.gz
```

Preparation:

Please install the latest release version of Corryvreckan on your computer or make sure you have access to a working version online before attending the tutorial.

Detailed instructions can be found in the manual or on the Corryvreckan github: (<https://gitlab.cern.ch/corryvreckan/corryvreckan>)

There are four options:

1. Compile and install Corryvreckan locally, with local ROOT version - please follow the installation instructions in the user manual
2. Use the Docker images - please refer to the user manual
3. Use Corryvreckan on LXPLUS using the centrally provided version on CVMFS. For this, you only need to source the appropriate script and you are ready to go:

For CERN CentOS7:

```
source
/cvmfs/clicdp.cern.ch/software/corryvreckan/<VERSION>/x86_64-centos7-gcc7-opt/setup.sh
```

For CERN Scientific Linux 6:

```
source
/cvmfs/clicdp.cern.ch/software/corryvreckan/<VERSION>/x86_64-slc6-gcc7-opt/setup.sh
```

4. Compile and install Corryvreckan locally or on LXPLUS, while using CVMFS version of ROOT - this works only for SLC6 and CentOS7 systems - install the CERN CVMFS daemon and source appropriate ROOT version using its .sh-script. Then compile Corryvreckan.

For all options including dependencies from CVMFS: It might take a while until the CVMFS cache is populated with the necessary libraries when starting the program for the first time.

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Session Classification: Hands-On Tutorials