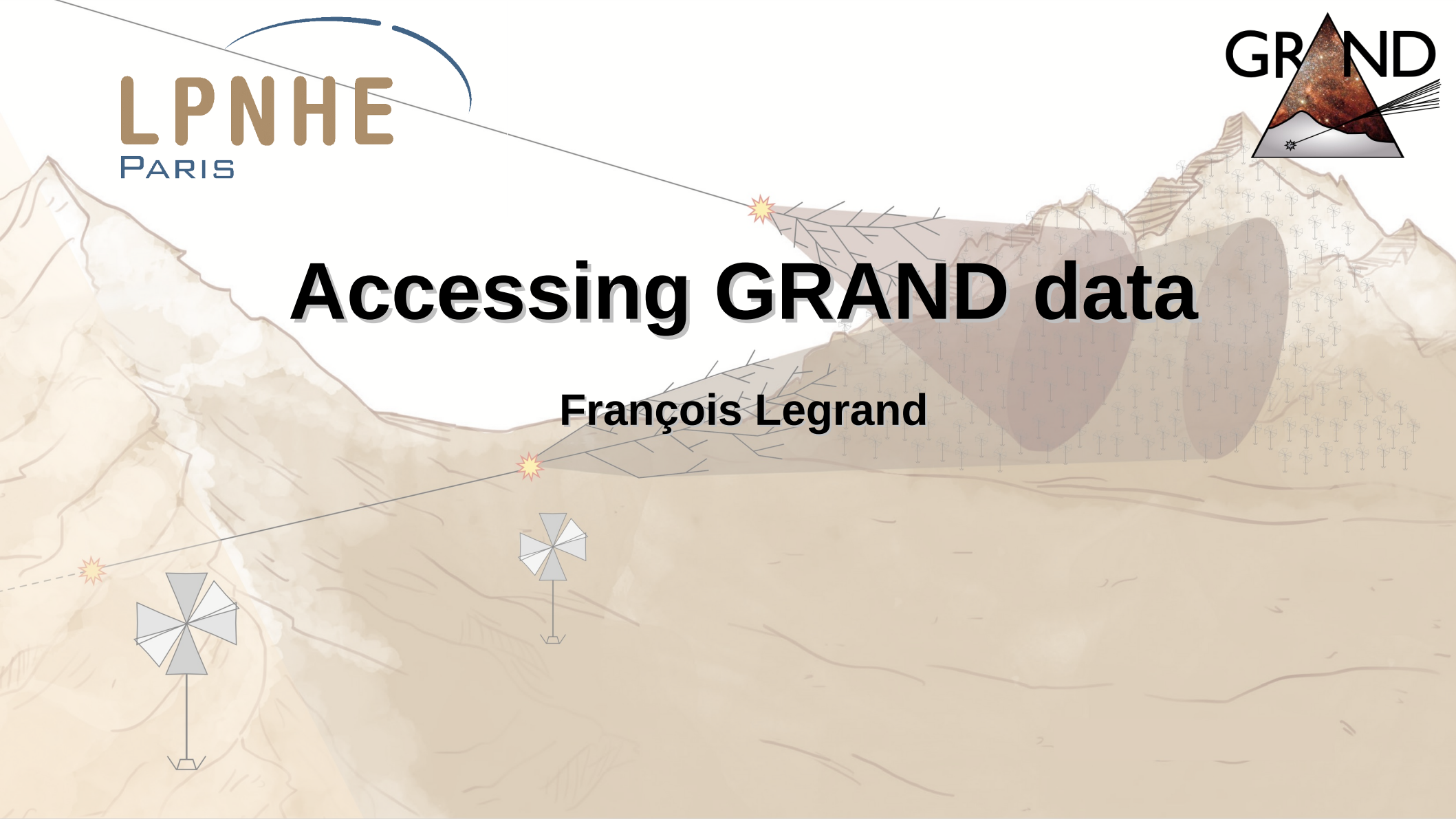


Accessing GRAND data

François Legrand



How to access Grand data ?

1. Directly at CCIN2P3
2. Using the datamanager inside python
3. Using the database website



Retreive data directly from CCIN2P3

- You need a account @ccin2p3
- You can ask for it at : <https://id.cc.in2p3.fr/>
 - Please specify in the registration that you are working on GRAND collaboration
- Data are in */sps/grand/data/<site>/GrandRoot/<year>/<month>*
 - Ex:
/sps/grand/data/gp80/GrandRoot/2025/05/GP80_20250526_084803_RUN194_MD_20dB-GP65-10s-X2float-10dus-0014.root
- Directories in */sps/grand/data/* are read-only for users
- **Warsaw hands on data are at : /sps/grand/data/handsonwarsaw**

Retreive data in python using datamanager

- You need a account @ccin2p3
- Using ssh key highly recommended (put it with ssh-copy-id)
- Need the last grandlib version (dev branch)
- You have to configure the datamanager in **grand/grandddb/config.ini**

```
[general]
provider = "Fleg"
[directories]
localdir = ["/data/incoming/"]
[repositories]
CC = ["ssh", "cca.in2p3.fr", 22, ["/sps/grand/data/gp80/GrandRoot/", "/sps/grand/
data/gaa/GrandRoot/"]]
[credentials]
CC = ["legrand", ""]
```

The local directory
where files will be
downloaded

Your credentials
@ccin2p3

The directories
@ccin2p3 where
files will be
searched

Retreive file in python using datamanager

- Open a ssh agent `eval $(ssh-agent)` and `ssh-add ~/.ssh/id_rsa`
- Use the datamanager in your python code

```
from datamanager import DataManager
dm = DataManager()
#file="GP80_20250317_202413_RUN150_UD_RAW-ChanXYZ-20dB-DU43-DU59-DU94-XorY-
Y2Float-X2Z-5075.root"
file="/sps/grand/data/handsonwarsaw/confirmed_events.zip"
print("My file is there : " + str(dm.get_file(file)))
```

The `get_file` function will retrieve the requested file from ccin2p3 and put it in your incoming dir and return the path to the local file

Retreive directory in python using datamanager

- Open a ssh agent `eval $(ssh-agent)` and `ssh-add ~/.ssh/id_rsa`
- Use the datamanager in your python code

```
from datamanager import DataManager
dm = DataManager()
dir="/sps/grand/data/handsonwarsaw/confirmed_events"
print("My dir is there : " + str(dm.get_dataset(dir)))
```

The `get_dataset` function will retrieve the requested directory from ccin2p3 and put it in your incoming dir and return the path to the local directory

Retreive data in python using datamanager

- The datamanager will first search for your file/dir in the local directories
- If full path to file/dir is given then it will retreive directly the file (faster) even if the path is not defined in the configuration file
- If only the file name is given, then it will search for it in the ccin2p3 repositories defines in the configuration (can be looong)
- If you don't have the ssh-agent the datamanager will ask interactively for the password to decrypt your ssh-key. If you have no ssh key use your ccin2p3 password.
- At datamanager creation you can give the path to the config.ini file
 - Eg:

```
dm = DataManager('/path/to/config.ini')  
dm = DataManager(os.path.dirname(__file__)+'/config.ini')
```

Retreive data from the database web site

- NO account @ccin2p3 needed
- **Use your mattermost account**
- Browse to <https://database.grand-observatory.org>
- Search your file
- Click to download
- Can be slow (retreive data from irods)
- **Warsaw Hands on file is at :**
https://database.grand-observatory.org/downloads/handsonwarsaw/confirmed_events.zip

Retreive data from the database web site



You can sort columns by clicking on their name.
You can filter results by typing characters in the boxes on top of columns. You can use <, >, >= or <= to filter by values in the search filters area and use * as wildcard.

[FILES](#)
[REPOSITORIES](#)
[RUNS](#)
[TRANSFER/CONVERSION MONITORING](#)

Filter your search

Search filters

GP80_202505*_RUN10097*	trees	run_number	number_of_events	first_event_time
last_event_time	data_source	site	energy_primary	azimuth
zenith	shower_core_pos	provider	repository	file_size

[Reset fields](#)
[Search](#)

RESULTS FOR FILES

Your request returns 15 results.

[Reset filters](#)

filename	trees	run_number	number_of_events
filename	trees	run_number	number_of_events
GP80_20250526_235622_RUN10097_CD_20dB-GP65-OC-X2float-10dus-CD-100000-15.root	tadc, trawvoltage, trun	10097	973
GP80_20250526_221445_RUN10097_CD_20dB-GP65-OC-X2float-10dus-CD-100000-14.root	tadc, trawvoltage, trun	10097	931
GP80_20250526_201645_RUN10097_CD_20dB-GP65-OC-X2float-10dus-CD-100000-13.root	tadc, trawvoltage, trun	10097	852
GP80_20250526_195500_RUN10097_CD_20dB-GP65-OC-X2float-10dus-CD-100000-12.root	tadc, trawvoltage, trun	10097	767
GP80_20250526_195249_RUN10097_CD_20dB-GP65-OC-X2float-10dus-CD-100000-11.root	tadc, trawvoltage, trun	10097	777
GP80_20250526_102042_RUN10097_CD_20dB-GP65-OC-X2float-10dus-CD-100000-10.root	tadc, trawvoltage, trun	10097	804

Click to download