

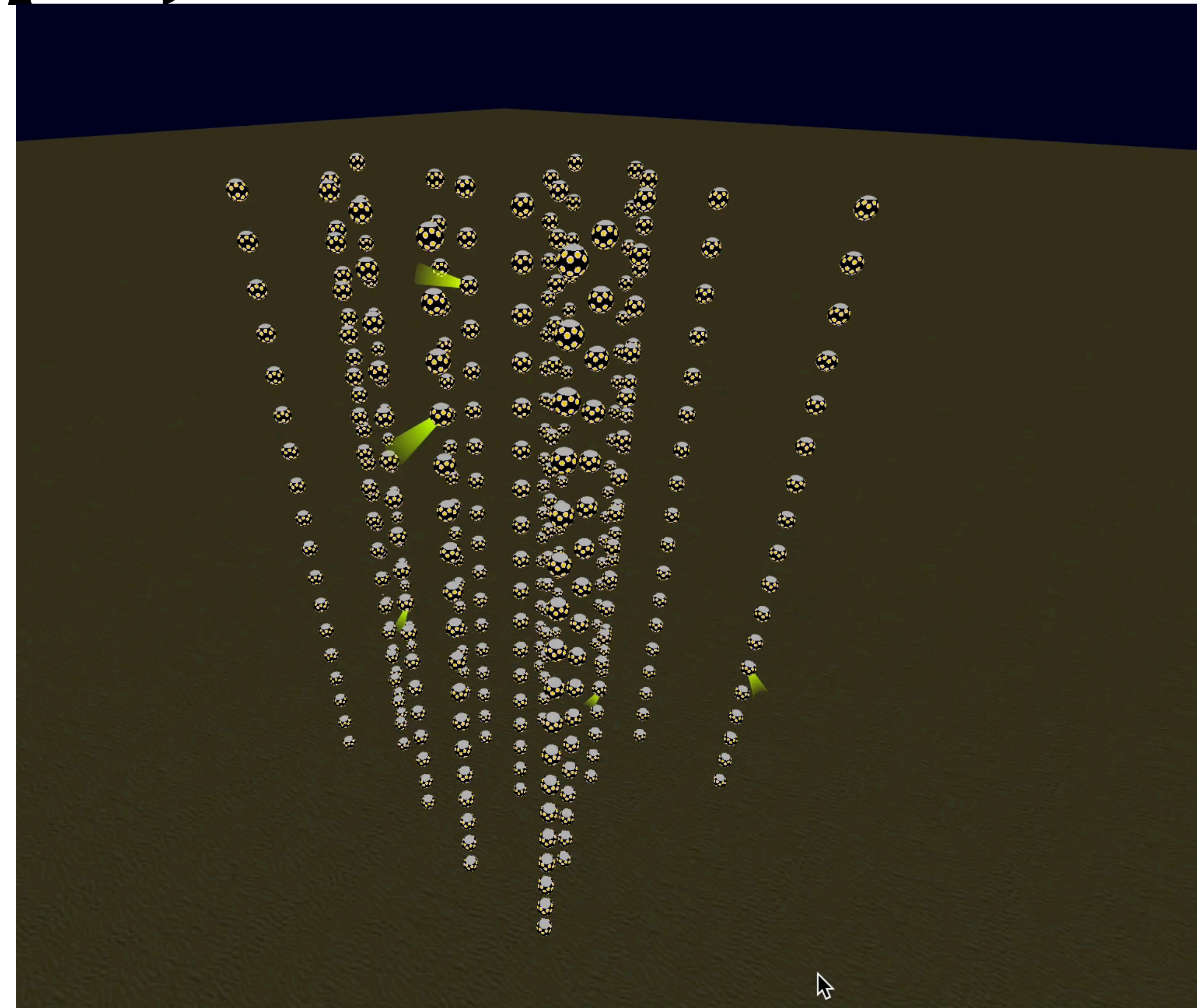
Event displays

KM3NeT

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Event displays

- **What?**
Representation of an event showing the hits, the reconstructed direction (and the simulation)
- **Why?**
It helps us understand the data
How do our events look like?



Event displays

How?

- Login to Lyon and copy the [Git repository](#)
- Source the environment: `source ./setenv.sh`
- An event display can be made using the Aanet example for a
 - [Data file](#)
 - [Simulation file](#)
- If you want to study a larger dataset, you can select events using a data summary tape (DST) and find the corresponding events

Event displays

How?

- Select events from the ARCA21 data dst using [this script](#)
 - Tune the selection to your liking
- Select the highest energy events from the ARCA21 data dst using [this script](#)
 - Tune the selection to your liking
- Create event displays using the events selected from the dst
 - [Script](#)
 - [Command to run the script](#)

Event displays

How?

- Copy the created directories to your Nikhef computer
 - Make the folder: ~/public_html
 - Put the event display directories there
 - Go to www.nikhef.nl/~<your_nikhef_username>
- Results ARCA21 data
 - [Top energies upgoing](#)
 - [Top energies downgoing](#)

Exercises

Overview

- You will split into groups and look at different datasets and events
 - Four possible exercises
 - Remaining muons for upgoing track selection with a full ARCA building block
 - Remaining muons for a contained shower selection with a full ARCA building block
 - Full ORCA neutrino events of different inelasticities
 - Upgoing reconstructed atmospheric muons in ARCA21
- > Or something you find interesting yourself?

Exercise

**Remaining muons for upgoing track selection with a full
ARCA building block**

Exercises

Remaining muons for upgoing track selection with a full ARCA building block

- [Wiki page production](#)
- Detector file: `/pbs/throng/km3net/detectors/KM3NeT_-00000001_20171212.detx`
- DSTs: `/sps/km3net/users/tvaneede/tmva/arca115/cascades/v2/output/`
- Simulation files:
 - Muons: `/sps/km3net/repo/v6_ARCA115/mc/atm_muon/KM3NeT_-00000001_20171212/v6/reco/`
 - Neutrinos: `/sps/km3net/repo/v6_ARCA115/mc/atm_neutrino/KM3NeT_-00000001_20171212/v6/reco/`

Exercise

Remaining muons for a contained shower selection with a full ARCA building block

Exercises

Remaining muons for a contained shower selection with a full ARCA building block

- [Wiki page production](#)
- Detector file: `/pbs/throng/km3net/detectors/KM3NeT_-00000001_20171212.detx`
- DSTs: `/sps/km3net/users/tvaneede/tmva/arca115/cascades/v2/output/`
- Simulation files:
 - Muons: `/sps/km3net/repo/v6_ARCA115/mc/atm_muon/KM3NeT_-00000001_20171212/v6/reco/`
 - Neutrinos: `/sps/km3net/repo/v6_ARCA115/mc/atm_neutrino/KM3NeT_-00000001_20171212/v6/reco/`

Exercise

Full ORCA neutrino events of different inelasticities

Exercise

Full ORCA neutrino events of different inelasticities

- [Wiki page](#): see ORCA115 2019
- Detector:
/pbs/throng/km3net/detectors/
orca_115strings_av20min17mhorizontal_18OMs_alt9mvertical_v2.detx
- Irods paths to simulation files:
/in2p3/km3net/mc/atm_neutrino/KM3NeT_ORCA_115_20m_9m/v5.0/JGandalf/aanet/
- I copied some simulation files to: /sps/km3net/users/tvaneede/event_displays/orca_data

Exercise

Upgoing reconstructed atmospheric muons in ARCA21

Exercise

Upgoing reconstructed atmospheric muons in ARCA21

- [Wiki page production](#)
- Detector file: `/sps/km3net/repo/data_processing/tag/v8.0/data_processing/detectors/KM3NeT_00000133_20221025.detx`
- DSTs: `/sps/km3net/repo/data_processing/tag/v8.1/data_processing/prod/dst/KM3NeT_00000133/v4/merged_all/`
- Data files: `/sps/km3net/repo/data_processing/tag/v8.1/data_processing/prod/data/KM3NeT_00000133/v8.1.1/reco/`
- Simulation files:
 - Muons: `/sps/km3net/repo/data_processing/tag/v8.1/data_processing/prod/mc/atm_muon/KM3NeT_00000133/v8.1/reco`
 - Neutrinos: `/sps/km3net/repo/data_processing/tag/v8.1/data_processing/prod/mc/atm_neutrino/KM3NeT_00000133/v8.1/reco/`