How to Use Geant4 in the CIP Pool (and remotely)

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Remote Access Using X2Go

- Session name: arbitrary
- Host: portal-intern.physik.rwth-aachen.de
- Login: username
- Try auto login (via SSH Agent or default SSH key)
- Use Proxy server for SSH connection
- Same login as on X2Go Server
- Same password as on X2Go Server
- Host (Proxy server): tunnel.physik.rwth-aachen.de
- SSH Agent or default SSH key
- Session type: **XFCE**, ~~KDE~~

Using Geant4 in the CIP Pool

- Log in using your account

- Download `geant4.10.6.p02.sh` from Moodle

- Source the setup files in a bash-like shell
  `source geant4.10.6.p02.sh`

- **Hint:** `echo $SHELL` tells you the shell you are using

- ## **Remark 1:**
  - When sourcing the above file you automatically set your environmental variables so that you use can use Geant4. This includes:
    - setting the **location of Geant4** and of its libraries and physics data,
    - preparing the environment for **compiling Geant4 program code**,
    - choosing a **newer compiler**,
    - adding **newer versions of libraries** to your library path.

- ## **Remark 2:**
  - Every time you open a new console/terminal you will need to source your environmental variable.

- ## **Remark 3:**
  - To avoid sourcing the setup file, one can make use of ".bashrc" file and source the file automatically when a new shell is started
  - **WARNING: This may have side effects! Especially other programs depending on older libraries may not work anymore!**

Testing Your Setup

- Download Geant4 example `B4.tar.gz` from Moodle.
- **Extract it:** `tar xzvf B4.tar.gz`
- Compile example B4a (simulation of a calorimeter):
  - `cd B4/B4a`
  - `cmake .`
  - `make`
- The executable will be stored in `.` (current directory)
- Start the program:
  `./exampleB4a`
- Shoot 100 particles (in this case e⁻) on the calorimeter.
  Enter "`/run/beamOn 100`" in the session field.
- What do you see?

- **Remark:** The program reads its configuration file (*.mac) from the current directory. If you execute the program in its own directory you have to copy the configuration files first.