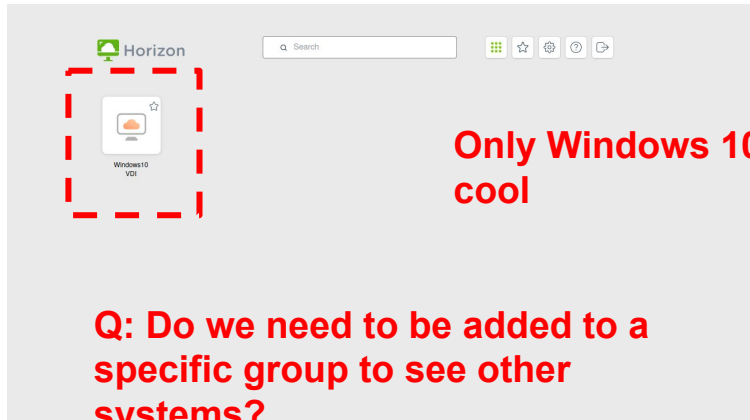# I journey of learning Moller Simulation Remoll
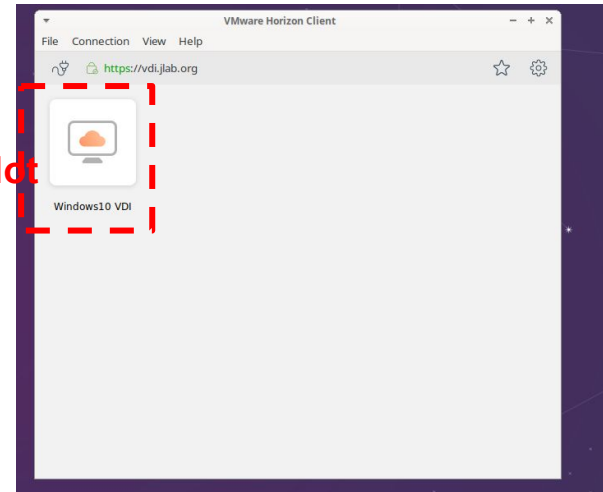
- **Remoll at VDI JLab (as Vassu introduced)**

- **Remoll at Singularity**

- **Remoll at local build**

- **Virtual Box? Docker? (Forget about it)**

Remoll @ Remote at JLab

- **Open Firefox or IE and go to https://vdi.jlab.org**

  - **Install the client software**

- **Or Download the software by clicking "Install VMware Horizon Client"**

  - **Add new server: vdi.jlab.org**

Only Windows 10 ? Not cool

Q: Do we need to be added to a specific group to see other systems?

Remoll at Singularity

- **But far the simplest route IF you have singularity installed**

- **If you don't, install singularity first, before that install GO first:**
  - **Follow this page: https://sylabs.io/guides/3.0/user-guide/installation.html**
  - **Install some necessary package:**
    $ sudo apt-get update && sudo apt-get install -y build-essential libssl-dev uuid-dev libgpgme11-dev squashfs-tools libseccomp-dev pkg-config

  - **Install GO:**
    **$ export VERSION=1.11 OS=linux ARCH=amd64 && **
    **wget https://dl.google.com/go/go$VERSION.$OS-$ARCH.tar.gz && **
    **sudo tar -C /usr/local -xzvf go$VERSION.$OS-$ARCH.tar.gz && **
    rm go$VERSION.$OS-$ARCH.tar.gz

Remoll at Singularity

-
  - **Continue GO installation:**
    **$ echo 'export GOPATH=${HOME}/go' >> ~/.bashrc && **
    echo 'export PATH=/usr/local/go/bin:${PATH}:${GOPATH}/bin' >> ~/.bashrc &&
    source ~/.bashrc

  - **Checkout singularity**
    $ go get -d github.com/sylabs/singularity

  - **Compile and install**
    **$./mconfig && **
    **make -C ./builddir && **
    sudo make -C ./builddir install

Remoll at Singularity

- **singularity pull docker://jeffersonlab/remoll:develop**
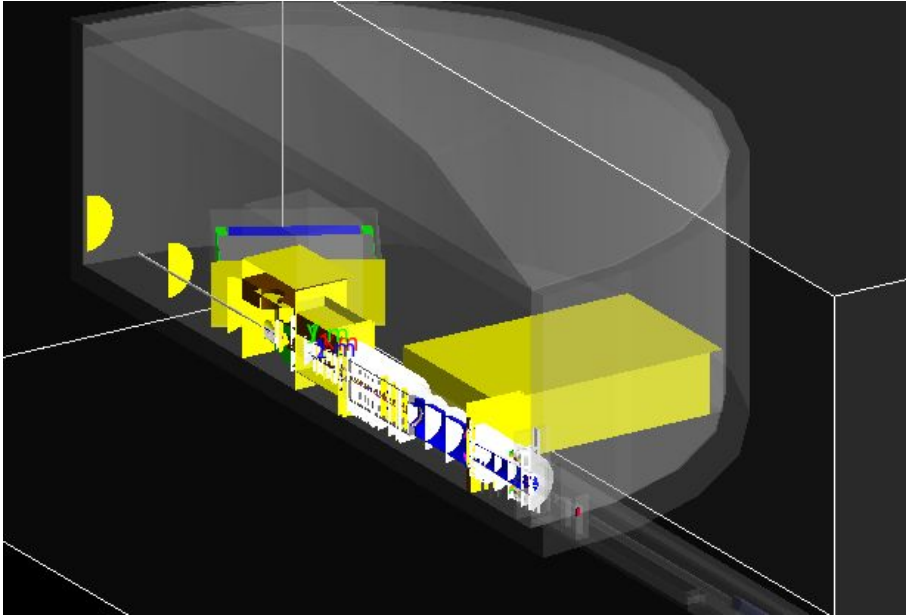- **singularity run jeffersonlab_remoll_develop.sif remoll -h**

Works but no graphics :(

```
Known Features:
staticlibs[no]
multithreading[yes]
smartstack[no]
php_as_hp[no]
clhep[no]
expat[no]
zlib[no]
gdml[yes]
usolids[no]
freetype[no]
hdf5[no]
g3tog4[yes]
qt[no]
motif[no]
raytracer-x11[no]
opengl-x11[no]
openinventor[no]
```
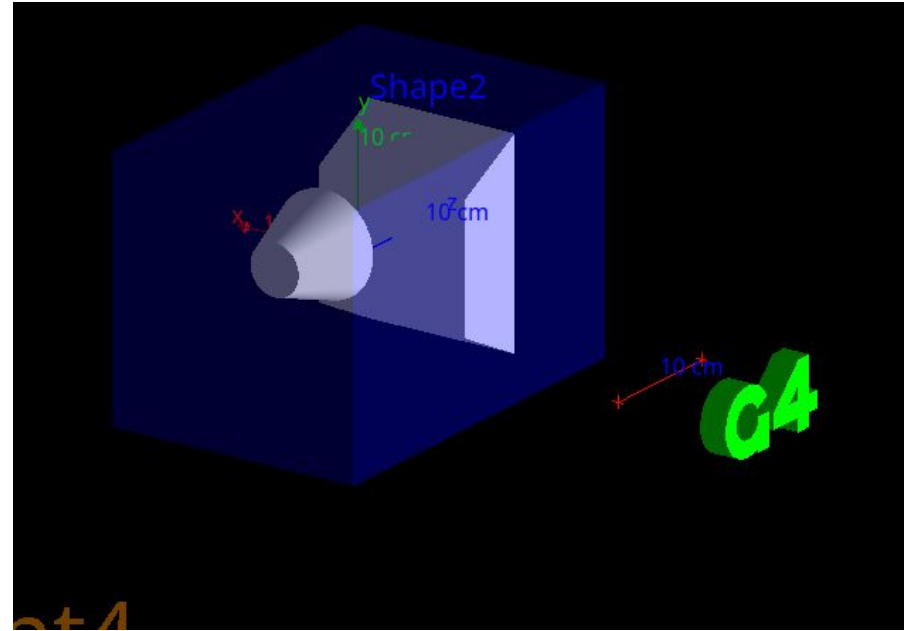
Remoll at Local build

- **Compile Geant4 and a few other dependencies**

- **When building geant4**
  - **cmake -DCMAKE_INSTALL_PREFIX=/path/to/build \ -DGEANT4_USE_GDML=ON -DGEANT4_USE_OPENGL_X11=ON \ -DGEANT4_USE_QT=ON -DGEANT4_INSTALL_DATA=ON /path/to/geant4/**

- **Build Remoll**
  - **No specific cmake option**

- **Don't forget: source geant4.sh**
- **Test: ./build/remoll**
- **$ /control/execute macros/runexample_vis.mac**
- **Caution: don't use remoll/vis/**

Works

Remoll

GEM tracker

Next step

- Run some events in Remoll

- make Gem tracker look real

```
# Mainz test energy
#/remoll/beamene 855 MeV

/remoll/evgen/set moller
#/remoll/evgen/thcommin 30.0 deg
#/remoll/evgen/thcommax 150.0 deg
#/remoll/evgen/set elastic
#/remoll/evgen/thmin 0.1 deg
#/remoll/evgen/thmax 2.0 deg
#/remoll/evgen/emin 80.0 MeV
#/remoll/evgen/set inelastic
#/remoll/evgen/set pion
#/remoll/piontype pi+
#/remoll/evgen/set pion_LUND
#/remoll/evgen/set inelasticAl
#/remoll/evgen/set quasielasticAl
#/remoll/evgen/set elasticAl
#/remoll/evgen/set external
#/remoll/externalfile remollout.root
#/remoll/externaldetid 4051
```