



# Production of simulations for GRAND

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# Today's status

- **Detector response simulation by Xidian group to grandlib**
  - Working branch [here](#)
  - Create a tarball of grand model (antenna, galaxy, detector) , here
    - <https://forge.in2p3.fr/projects/grand-master/files>
    - Need to write automatic download and install it in new directory « data » in grand package
  - Dispatch Xidian's function in grandlib
    - grand/num/signal.py : fftget, ifftget
    - grand/simu/elec\_du : lna\_get, filter\_get
    - grand/simu/galaxy : gala
  - Rewrite CEL function (Compute Effective Length) with grandlib, mainly with Antenna class and effective\_length() method
  - The integrated Xidian script executes in full, it calculates for all the traces present in a ZHAires simulation: Voc, Vfilter, Vlna, Vlna\_filter (see screenshot next page). ~1 second by trace.
  - But the results are not satisfactory, Voc calculated with shower-event.py doesn't give the same result, I must have made a mistake somewhere ...
  - Anyway
    - I think the result of Voc given by grandlib has a problem of causality
    - I also need to check some points with Xidian group

- ▼ result
  - ▼ Stshp\_MZS\_QGS204JET\_Proton\_3.98\_79.6\_90.0\_9
    - ▼ output\_withoutnoise
      - ▶ Vfilter
      - ▼ Vlna
        - a0.trace
        - a1.trace
        - a2.trace
        - a3.trace
      - ▶ Vlna\_cable
      - ▼ voc
        - a0.trace
        - a1.trace
        - a2.trace
        - a3.trace
      - antpos.dat
      - parameter.txt
    - ▼ Stshp\_MZS\_QGS204JET\_Proton\_3.98\_79.6\_90.0\_9
      - ▶ Stshp\_MZS\_QGS204JET\_Proton\_3.98\_79.6\_90.0\_9\_trace
        - a0.trace
        - a1.trace
        - a2.trace
        - a3.trace
        - Aires.dirs
        - Aires.status
        - antpos.dat
        - JobId
        - runZHAires
        - Stshp\_MZS\_QGS204JET\_Proton\_3.98\_79.6\_90.0\_9.idf
        - Stshp\_MZS\_QGS204JET\_Proton\_3.98\_79.6\_90.0\_9.inp
        - Stshp\_MZS\_QGS204JET\_Proton\_3.98\_79.6\_90.0\_9.lgf