

# Special resources for physics analysts

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# Recommended workflow

Task	Resource
Developing analysis code	LXPLUS, local desktop/laptop, institute-based resources, CERN OpenStack VMs
Making n-tuples (or other personal/analysis team format) from DAODs	Grid
Onward processing of n-tuples, e.g. size reduction, systematics, statistical analysis, plotting	Local desktop/laptop, institute-based resources, Grid
Storing DAODs	Done centrally - no need to do anything special
Storing n-tuples	Grid: subscription to local group disk or physics group disk (including @ CERN accessible from EOS)

# Summary of special resources

What?	Why?	How?
GPUs at CERN	Small scale tests of GPU software or machine learning applications	<a href="https://batchdocs.web.cern.ch/tutorial/exercise10.html">https://batchdocs.web.cern.ch/tutorial/exercise10.html</a>
GPUs on the grid	Large scale machine learning	<a href="https://gitlab.cern.ch/aml/tutorials/dl1-hyperparameter-optimisation/">https://gitlab.cern.ch/aml/tutorials/dl1-hyperparameter-optimisation/</a>
Jupyter notebooks at CERN	Interactive Python-based analysis via a web interface	<a href="http://swan.cern.ch">swan.cern.ch</a> ; <a href="http://hub.cern.ch">hub.cern.ch</a>
Jupiter notebooks outside of CERN	See above; particularly for ML	<a href="http://atlas-ml.org">atlas-ml.org</a>

# User analysis priorities

- We can raise the priority for specific users on request so that user analysis grid jobs run with higher priority
  - Must be supported by the physics coordinators; please contact them first
- We can also raise the priority on the CERN batch system (HTCondor)
  - This should also be supported by PC
- Resources are very limited: in general we do not recommend use of the CERN batch system - if you need larger scale resources it's best to use the grid

# Bonus

- Deletion of obsolete datasets will take place **tomorrow**
- See the lists here:
  - [http://adc-mon.cern.ch/DAODProduction//DAILYCHECK\\_MC/](http://adc-mon.cern.ch/DAODProduction//DAILYCHECK_MC/)
  - [http://adc-mon.cern.ch/DAODProduction//DAILYCHECK\\_DATA/](http://adc-mon.cern.ch/DAODProduction//DAILYCHECK_DATA/)
- This action is necessary due to an urgent shortage of disk space at many grid sites

