HPC, cloud, and opportunistic resources

- Experiments overview
  - HPCs used regularly by all 4 experiments, ~30 centers
  - Most HPCs run MC, some everything
  - CVMFSExec works for most without cmvfs mounted
  - X86_64 mostly, with some GPU usage
- MadGraph5
  - Perfect example of using new cpu features (x8 speedup) and gpu offloading (60x) speed up
  - Can significantly increase event generation rate, other generators might benefit as well
  - Foreseen for production
- Benchmarking:
  - New arch (arm) and GPU studies, new workloads to be defined
  - I/IO benchmarking essential for HPCw

HPC, cloud, and opportunistic resources

- Clouds:
    - ATLAS fully automated on Google with k8s, similar pn UVic cloud
    - Accounting and authorization non trivial (IGTF)
    - LHCONE integration - need to understand from traffic and security point of view
- The vision of HPC in EU:
    - 7B euro investment till 2027, Quantum Computing top priority
    - Large investment in R&D, training and education, competence centers, centers of excellence
    - Spread usage in industry
- US HPC summary:
    - (summary of summary is too hard...)
    - Essential to work on WLCG HPC strategy document
- Panel:
    - For new architectures, essential to have a full chain development infrastructure at CERN
    - Standardization of SW development, using cross-architecture sw platforms
    - No need for significant ML infrastructure yet
    - Find a proper/common way to communicate with HPC centers and organizations
    - Cloud usage in the future depends on TCO