

surveys / discovery space

- many science goals need massive surveys
 - statistics : eg DM, DE mapping
 - large structures : eg Galactic Archaeology
 - rare objects : eg $z=10$ QSOs, NEOs

looking at PB datasets
- and/or data intensive computing
 - N^2 calcns
 - monitoring; fast alerts (LSST, SKA, GRBs)
 - operations : MCAO, correlators

bottleneck

- Data, flops, storage : Moores Law
I/O bw, last-mile bw : much slower
- major centres : GB/s
end-users : MB/s
- ==> keep the science next to the data
exploitation supercomputers
exploitation has to be organised

facilities vs experiments

- Old : Facility ==> many small users
- New : Experiment ==> one team
particle physics style
- Or : Data services ==> many small users
need a data infrastructure

Survey Discovery Space

- wavelength done (except MeV ?)
- spec. survey done
- depth too expensive (except radio ?)
- resolution too expensive
- time just opening : sky repeats
- neutrinos about to open
- grav waves about to open but can only
locate with sim. HE monitor

my pic

- HE neutrino telescope
- LISA+MeV monitor
- SKA
- LSST