IceCube

Operating a Data Center at the South Pole

Agenda

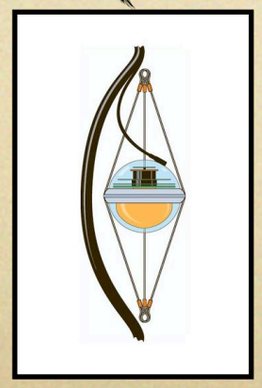
- Icecube operations overview
- Computing infrastructure at the South Pole
- The data center
- Seasonal planning
- Operational challenges
- Questions / Discussion

Day-to-day operation

Remote Logins

Once a year

South Pole



UW-Madison

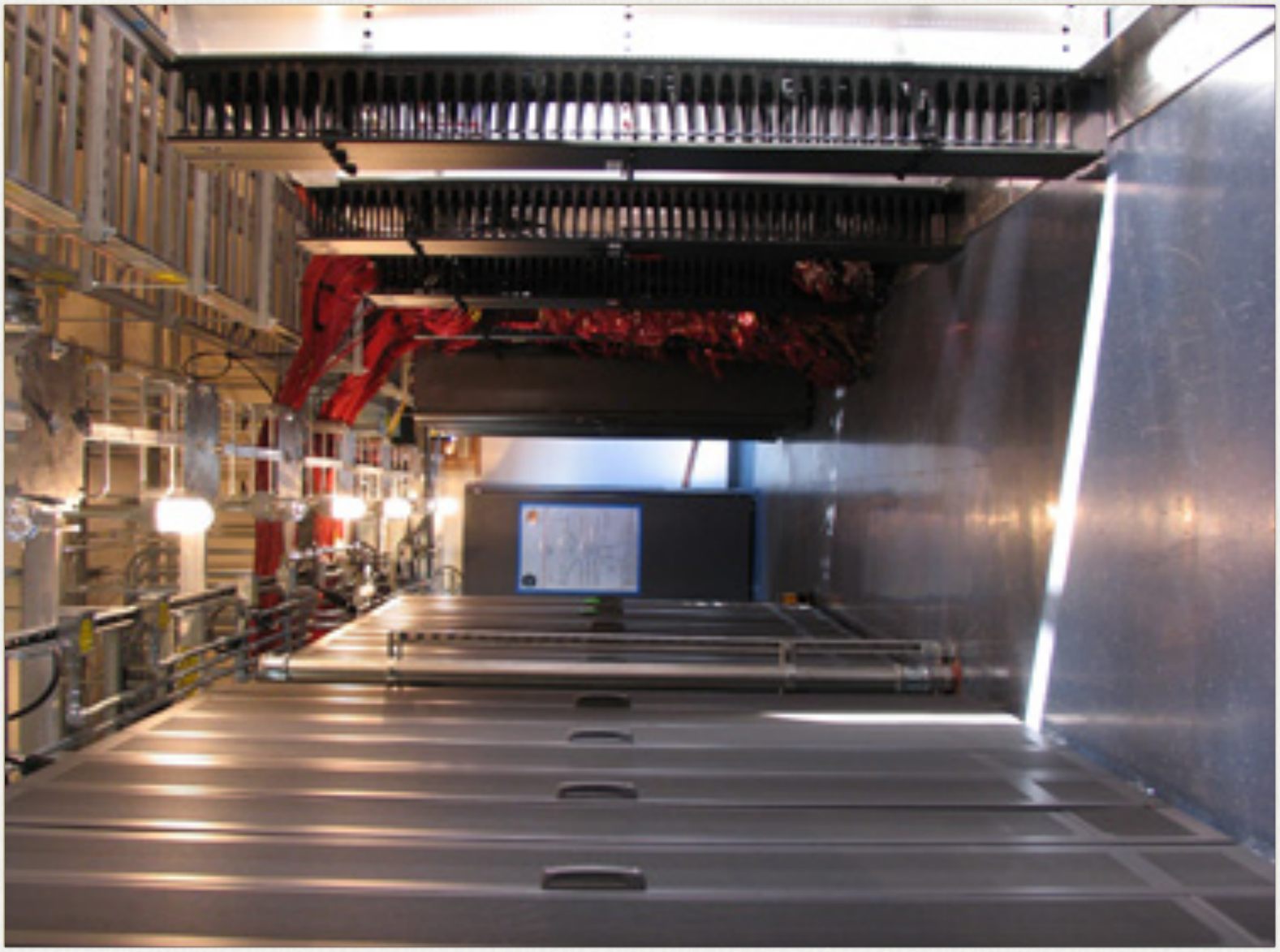
The Infrastructure

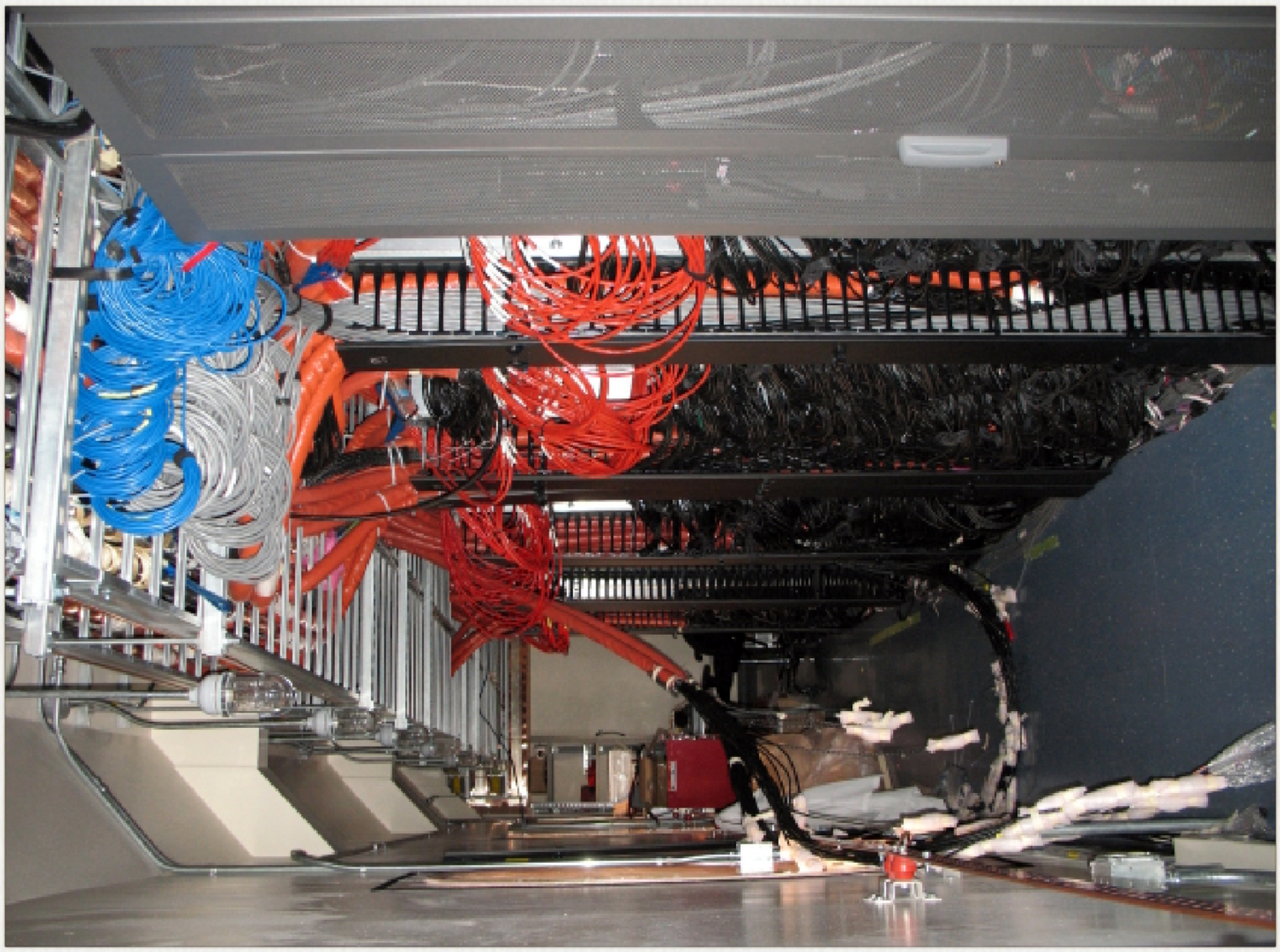
- 130 server class machines (Intel & AMD)
  - 350 CPU cores, 0.5TB RAM, 250 spinning disks
- UPS, Network switches and a firewall
- Storage arrays (~30TB)
- Tape libraries
- Other support electronics for the detector

The IceCube Lab

- Heart of the IceCube data acquisition
- Originally was a dormitory for USAP participants
  - Official operations started in Jan 2007
- Powered by the station power plant
  - Consumes about 50kw out of 650+250kw available station power
- Cooled via pumping outside air into the building


MANTIS






EXIT

Seasonal planning

- Training winter over operators
- Updating the test system in Madison to reflect changes in the ICL
- Detailed documentation
- Logistics - planning for spares, upgrades, additions, etc.

Operational Challenges

- Low humidity = high ESD
- Power stability
- Cooling
- Planning for spares
- Remote management & administration
- Making functional changes after station close