CMB-S4

- 508 members
- 125 institutions
- 24 countries

U.S. DEPARTMENT OF ENERGY | Office of Science

NSF

Fiber at Cerro Toco

- Dark fiber build is complete
- Splicing work complete
- REUNA is in the process of completing the connection to Simons Observatory
  - **Many thanks to Albert Astudillo and team!**
- Passive optical multiplexer (“mux”) to be deployed
  - No active electronics - no power footprint, less stuff to fail
  - Isolate experiments from each other (no shared fate for power, config, etc)
  - Wavelength-specific pluggable optics are commodity items
    - 1G or 10G, up to 80km reach
    - E.g. https://www.fs.com/products/47241.html
- CMB-S4 future use
  - Once Simons Observatory is up and running, CMB-S4 hopes to bring up REUNA connection (more in a moment)

Fiber channel allocation

Channel ID	Frequency	Wavelength	Institution
1	195.9	1470.00	Simons Observatory
2	195.8	1490.00	CLASS
3	195.7	1510.00	PolarBear / SA
4	195.6	1530.00	CMB-S4
5	195.5	1550.00	
6	195.4	1570.00	
7	195.3	1590.00	
8	195.2	1610.00	

Wavelength indicates which pluggable optic to buy

CMB-S4 perfSONAR

- In collaboration with Simons Observatory, CMB-S4 is exploring the deployment of a perfSONAR server at Cerro Toco
  - Intent is to use the CMB-S4 channel on the CWDM fiber mux
  - Lightweight network presence - no ongoing high-bandwidth testing
  - There is space in the fiber rack in SO Container C1
- Multiple reasons for this
  - Tangible evidence of progress for funding agencies
  - Provide operational experience with network measurement for CMB-S4
  - Ability to characterize network paths as data plans continue to develop
- Many thanks to REUNA and SO
  - Albert Astudillo
  - David Boettger
  - Jeff Makey
  - Others, I'm sure!

Data Management - Rucio Testing

- Exploring Rucio for data management
- Rucio is well-supported by the particle physics community
  - Origin in LHC-ATLAS
  - Adopted by LHC-CMS
  - Increasing adoption by other communities
  - Ongoing support likely - low-risk from that perspective
- Omar Moreno is leading prototyping/testing efforts
  - Initial discussions with NERSC to deploy on Spin service
  - Additional efforts ongoing

Thanks!

Questions?