

2022 Spring Collaboration Meeting

Report of Contributions

Contribution ID: 1

Type: **not specified**

Systems Engineering Update

Tuesday, 10 May 2022 12:00 (12 minutes)

Presenter: BESUNER, Bobby (Lawrence Berkeley National Laboratory)

Session Classification: Technical Updates 1

Contribution ID: 2

Type: **not specified**

Detectors Subsystem Update

Tuesday, 10 May 2022 12:12 (12 minutes)

Presenter: JOSEPH, John (Lawrence Berkeley National Laboratory;)

Session Classification: Technical Updates 1

Contribution ID: 3

Type: **not specified**

Readout Subsystem Update

Tuesday, 10 May 2022 12:24 (12 minutes)

Presenter: AHMED, Zeeshan (SLAC)

Session Classification: Technical Updates 1

Contribution ID: 4

Type: **not specified**

Module Assembly & Testing Subsystem Update

Tuesday, 10 May 2022 12:36 (12 minutes)

Presenter: Dr BENSON, Bradford (Fermilab; University of Chicago)

Session Classification: Technical Updates 1

Contribution ID: 5

Type: **not specified**

Large Aperture Telescope Subsystem Update

Tuesday, 10 May 2022 12:48 (12 minutes)

Presenter: Prof. NIEMACK, Michael (Cornell University)

Session Classification: Technical Updates 1

Contribution ID: 6

Type: **not specified**

Small Aperture Telescope Subsystem Update

Tuesday, 10 May 2022 13:00 (12 minutes)

Presenter: KOVAC, John (Harvard University;Center for Astrophysics | Harvard & Smithsonian)

Session Classification: Technical Updates 1

Contribution ID: 7

Type: **not specified**

Data Acquisition & Control Subsystem Update

Tuesday, 10 May 2022 13:12 (12 minutes)

Presenter: Prof. NEWBURGH, Laura (Yale University)

Session Classification: Technical Updates 1

Contribution ID: 8

Type: **not specified**

Data Management Subsystem Update

Tuesday, 10 May 2022 13:24 (12 minutes)

Presenter: BORRILL, Julian (Lawrence Berkeley National Laboratory & UC Berkeley)

Session Classification: Technical Updates 1

Contribution ID: 9

Type: **not specified**

Chile Infrastructure, Integration & Commissioning Subsystem Update

Tuesday, 10 May 2022 13:36 (12 minutes)

Presenter: Prof. ARNOLD, Kam (UC San Diego)

Session Classification: Technical Updates 1

Contribution ID: **10**

Type: **not specified**

South Pole Infrastructure, Integration & Commissioning Update

Tuesday, 10 May 2022 13:48 (12 minutes)

Presenter: BENDER, Amy (Argonne National Laboratory; KICP)

Session Classification: Technical Updates 1

Contribution ID: 11

Type: **not specified**

Introduction/Overview

Wednesday, 11 May 2022 12:15 (10 minutes)

Presenter: RUHL, John (Case Western Reserve University)

Session Classification: Systematics

Contribution ID: 12

Type: **not specified**

SAT beam-related systematics

Wednesday, 11 May 2022 12:40 (15 minutes)

Presenters: VERGÈS, Clara (Harvard University); KARKARE, Kirit (University of Chicago, Fermilab)

Session Classification: Systematics

Contribution ID: 13

Type: **not specified**

Calibration Plans/Hardware

Wednesday, 11 May 2022 13:10 (20 minutes)

Presenters: NAGY, Johanna (Washington University St. Louis); KARKARE, Kirit (University of Chicago, Fermilab)

Session Classification: Systematics

Contribution ID: 14

Type: **not specified**

SAT band + other systematics

Wednesday, 11 May 2022 12:25 (15 minutes)

Presenter: BISCHOFF, Colin (University of Cincinnati)

Session Classification: Systematics

Contribution ID: 27

Type: **not specified**

Recent progress by the RFI working group, and upcoming efforts

Tuesday, 10 May 2022 08:15 (15 minutes)

Presenters: BARRON, Darcy (University of New Mexico); PAINE, Scott (Center for Astrophysics | Harvard & Smithsonian;)

Session Classification: Radio Frequency Interference

Contribution ID: 28

Type: **not specified**

Presentation from NSF's Electromagnetic Spectrum Management Group

Tuesday, 10 May 2022 08:55 (35 minutes)

Presenters: VANDERLEY, Ashley (NSF); WILLIAMS, Jonathan V. (NSF)

Session Classification: Radio Frequency Interference

Contribution ID: 29

Type: **not specified**

QUIJOTE experience with Satellite RFI

Tuesday, 10 May 2022 08:30 (15 minutes)

Presenter: PEEL, Mike (Instituto de Astrofísica de Canarias)

Session Classification: Radio Frequency Interference

Contribution ID: **30**

Type: **not specified**

CMB-S4 satellite RFI coupling calculations

Tuesday, 10 May 2022 08:45 (10 minutes)

Presenter: BIRDWELL, Ian (University of New Mexico;)

Session Classification: Radio Frequency Interference

Contribution ID: 31

Type: **not specified**

Meeting introduction

Monday, 9 May 2022 08:00 (15 minutes)

Logistics, code of conduct, meeting agenda, and priorities.

Presenter: BESUNER, Bobby (Lawrence Berkeley National Laboratory)

Session Classification: Opening Session

Contribution ID: **32**

Type: **not specified**

Project status

Monday, 9 May 2022 08:15 (30 minutes)

Presenter: CORLETT, John (Lawrence Berkeley National Laboratory)

Session Classification: Opening Session

Contribution ID: 33

Type: **not specified**

Analysis of Alternatives overview

Monday, 9 May 2022 08:45 (30 minutes)

Introduction / preview for Analysis of Alternatives status and plans plenary session

Presenter: CARLSTROM, John (University of Chicago;Argonne National Laboratory)

Session Classification: Opening Session

Contribution ID: 34

Type: **not specified**

Snowmass preparation overview

Monday, 9 May 2022 09:15 (15 minutes)

Introduction / preview for Friday's Snowmass preparation plenary session.

Presenters: CHANG, Clarence (Argonne National Laboratory;University of Chicago); MEYERS, Joel (Southern Methodist University;)

Session Classification: Opening Session

Contribution ID: 35

Type: **not specified**

Education and Public Outreach committee update

Tuesday, 10 May 2022 10:30 (10 minutes)

Current and recent work from the EPO committee

Presenters: BISCHOFF, Colin (University of Cincinnati); CROWELL, Juliet (University of Chicago);

Session Classification: Education and Public Outreach

Contribution ID: 36

Type: **not specified**

IceCube educational and outreach programs

Tuesday, 10 May 2022 10:40 (50 minutes)

In this talk, Ellen Bechtol will review the education and outreach (E&O) activities for the IceCube Neutrino Observatory (IceCube) with special emphasis on efforts run or managed by the Wisconsin IceCube Particle Astrophysics Center (WIPAC). Ellen will share approaches to sharing IceCube and WIPAC science such as through a variety of activities ranging from science festivals for the general public to targeted after-school programming for high school students. She will share experiences and learnings from the E&O team and discuss recent pivots made in light of the coronavirus pandemic.

Presenter: CHILDRESS BECHTOL, Ellen (UW-Madison)

Session Classification: Education and Public Outreach

Contribution ID: 37

Type: **not specified**

Updates to PBDR / Preparing for Science Book II

Thursday, 12 May 2022 12:00 (10 minutes)

Presenters: MEYERS, Joel (Southern Methodist University); HUFFENBERGER, Kevin (Florida State University)

Session Classification: Analysis Working Group Updates

Contribution ID: 38

Type: **not specified**

Executive Team Update

Monday, 9 May 2022 10:00 (1 hour)

Presenters: CRITES, Abigail (Cornell University); BISCHOFF, Colin (University of Cincinnati); BAR-
RON, Darcy (University of New Mexico); CARLSTROM, John (University of Chicago; Argonne National
Laboratory); RUHL, John (Case Western Reserve University); BORRILL, Julian (Lawrence Berkeley Na-
tional Laboratory & UC Berkeley); KNOX, Lloyd (UC Davis); SIMON, Sara (Fermilab)

Session Classification: Collaboration Updates

Contribution ID: 40

Type: **not specified**

Governing Board Update

Monday, 9 May 2022 11:00 (20 minutes)

Presenter: BLEEM, Lindsey (Argonne National Laboratory & KICP)

Session Classification: Collaboration Updates

Contribution ID: 41

Type: **not specified**

Low-ell BB

Thursday, 12 May 2022 12:10 (15 minutes)

Presenters: BISCHOFF, Colin (University of Cincinnati); Dr WU, Kimmy (SLAC National Accelerator Laboratory)

Session Classification: Analysis Working Group Updates

Contribution ID: 42

Type: **not specified**

Ombudspeople Report

Monday, 9 May 2022 11:20 (10 minutes)

Presenters: TUCKER, Gregory (Brown University); HLOZEK, Renee (University of Toronto)

Session Classification: Collaboration Updates

Contribution ID: 43

Type: **not specified**

Maps to power spectra

Thursday, 12 May 2022 12:25 (15 minutes)

Presenter: CYR-RACINE, Francis-Yan (University of New Mexico)

Session Classification: Analysis Working Group Updates

Contribution ID: 45

Type: **not specified**

Maps to other statistics

Thursday, 12 May 2022 12:40 (15 minutes)

Presenters: SHERWIN, Blake (University of Cambridge); ALVAREZ, Marcelo (Lawrence Berkeley National Laboratory)

Session Classification: Analysis Working Group Updates

Contribution ID: 46

Type: **not specified**

Galaxy Clusters

Thursday, 12 May 2022 12:55 (15 minutes)

Presenters: BARTLETT, James (AstroParticle & Cosmology Laboratory); RAGHUNATHAN, Srinivasan (NCSA)

Session Classification: Analysis Working Group Updates

Contribution ID: 47

Type: **not specified**

Sources & Transients

Thursday, 12 May 2022 13:10 (15 minutes)

Presenters: HO, Anna (UC;LBL); VIEIRA, Joaquin (University of Illinois at Urbana-Champaign;)

Session Classification: Analysis Working Group Updates

Contribution ID: 48

Type: **not specified**

Open Discussion on Key Science Topics

Thursday, 12 May 2022 13:25 (35 minutes)

Presenters: MEYERS, Joel (Southern Methodist University); HUFFENBERGER, Kevin (Florida State University)

Session Classification: Analysis Working Group Updates

Contribution ID: 50

Type: **not specified**

Update on Data Challenge 1

Thursday, 12 May 2022 10:30 (40 minutes)

Presenters: ZONCA, Andrea (University of California San Diego); BISCHOFF, Colin (University of Cincinnati); BORRILL, Julian (Lawrence Berkeley National Laboratory & UC Berkeley); KESKITALO, Reijo (Lawrence Berkeley National Laboratory & UC Berkeley); SIMON, Sara (Fermilab); KISNER, Theodore (Lawrence Berkeley National Laboratory & UC Berkeley)

Session Classification: Data Challenges

Contribution ID: 51

Type: **not specified**

Towards Data Challenge 2

Thursday, 12 May 2022 11:10 (20 minutes)

Presenter: SIMON, Sara (Fermilab)

Session Classification: Data Challenges

Contribution ID: 53

Type: **not specified**

South Pole Alternatives

Wednesday, 11 May 2022 10:00 (1h 30m)

Outline of session with lead presenter indicated:

- Rationale for, and overview of, alternative South Pole configurations to analyse (John Carlstrom)
- Potential of low-ell measurements with the TMA design of the SPLAT:
 - Review TMA justification (Jeff McMahon)
 - New developments in mirror fabrication (Nick Emerson)
 - Estimates for low-ell sensitivity with SPLAT (Tom Crawford)
- r projections for South Pole configurations (Tom Crawford et al)
- Risks, R&D (John Kovac)
- Site impact (Amy Bender, Erik Nichols)

Presenters: BENDER, Amy (Argonne National Laboratory; KICP); NICHOLS, Erik (University of Chicago; Remote Science Services LLC); MCMAHON, Jeff (University of Chicago); CARLSTROM, John (University of Chicago; Argonne National Laboratory); KOVAC, John (Harvard University; Center for Astrophysics | Harvard & Smithsonian); EMERSON, Nick (University of Arizona); CRAWFORD, Tom (University of Chicago; KICP)

Session Classification: Analysis of Alternatives 2

Contribution ID: 54

Type: **not specified**

Chile Alternatives

Wednesday, 11 May 2022 08:00 (1h 30m)

- ApJ paper and DSR results for r, include assumptions & overview of the elements of r-comparison SP v Chile
- Comparison of codes and first results
- Impact of sky survey options
- Observing efficiency
- Sensitivity, atmosphere, 1/2 wave plates
- Foregrounds
- Delensing
- Risks and R&D, e.g., 1/2 wave plates, ground pickup, R&D of SATs in Chile
- Site infrastructure implications of SATs in Chile

Presenters: HENSLEY, Brandon (Princeton University); BISCHOFF, Colin (University of Cincinnati); ALONSO, David (Oxford University); MCMAHON, Jeff (University of Chicago); KOVAC, John (Harvard University; Center for Astrophysics | Harvard & Smithsonian); RUHL, John (Case Western Reserve University); ERRARD, Josquin (AstroParticle & Cosmology Laboratory); BORRILL, Julian (Lawrence Berkeley National Laboratory & UC Berkeley); ARNOLD, Kam (UC San Diego); FLAUGER, Raphael (UC San Diego); KESKITALO, Reijo (Lawrence Berkeley National Laboratory & UC Berkeley); SIMON, Sara (Fermilab); CLARK, Susan (Stanford University)

Session Classification: Analysis of Alternatives 1

Contribution ID: 55

Type: **not specified**

Transient Science Cases & Requirements

Friday, 13 May 2022 10:45 (35 minutes)

Presenters: HO, Anna (UC;LBL); Prof. VIEIRA, Joaquin (University of Illinois at Urbana-Champaign;)

Session Classification: Transients + Foregrounds

Contribution ID: 56

Type: **not specified**

Galactic Foreground Modeling For CMB Experiments

Friday, 13 May 2022 11:20 (20 minutes)

Presenters: HENSLEY, Brandon (Princeton University); CLARK, Susan (Stanford University)

Session Classification: Transients + Foregrounds

Contribution ID: 57

Type: **not specified**

Extragalactic Foreground Modeling For CMB and LSS Experiments

Friday, 13 May 2022 11:40 (20 minutes)

Presenters: LIU, Jia (UC Berkeley); ALVAREZ, Marcelo (Lawrence Berkeley National Laboratory)

Session Classification: Transients + Foregrounds

Contribution ID: **60**

Type: **not specified**

Performance Margin

Thursday, 12 May 2022 09:00 (30 minutes)

Presenters: BESUNER, Bobby (Lawrence Berkeley National Laboratory); SIMON, Sara (Fermi-lab)

Session Classification: Technical Updates 2

Contribution ID: **61**

Type: **not specified**

SAT and LAT on-site I&C plans

Thursday, 12 May 2022 08:30 (30 minutes)

Presenters: DIERICKX, Marion (Center for Astrophysics | Harvard & Smithsonian); NATOLI, Tyler (University of Chicago;KICP)

Session Classification: Technical Updates 2

Contribution ID: **62**

Type: **not specified**

DRM production & testing plans

Thursday, 12 May 2022 08:00 (30 minutes)

Presenter: FLAUGHER, Brenna (Fermilab)

Session Classification: Technical Updates 2

Contribution ID: 63

Type: **not specified**

Collaboration Values

Monday, 9 May 2022 12:00 (2 hours)

This session will focus on developing our collaboration values. In the session, we will discuss and prioritize our collaboration values and develop shared definitions of our values. Our values are critical for guiding and prioritizing collaboration policy, activities, and recommendations. The feedback from this session will be used to develop a CMB-S4 values statement. Some examples of values statements are linked below.

NOTE: We will be breaking out into small discussion groups by interest, so calling in individually is preferred.

Presenter: SIMON, Sara (Fermilab)

Session Classification: Collaboration Values

Contribution ID: **64**

Type: **not specified**

LAT systematics

Wednesday, 11 May 2022 12:55 (25 minutes)

Presenter: MCMAHON, Jeff (University of Chicago;)

Session Classification: Systematics

Contribution ID: 65

Type: **not specified**

Discussion

Wednesday, 11 May 2022 13:40 (20 minutes)

Session Classification: Systematics

Contribution ID: 66

Type: **not specified**

Multi-wavelength observations of clusters

Friday, 13 May 2022 08:25 (5 minutes)

Presenter: BLEEM, Lindsey (Argonne National Laboratory & KICP)

Session Classification: Snowmass Preparation

Contribution ID: 67

Type: **not specified**

History & status of CMB-S4

Friday, 13 May 2022 08:00 (20 minutes)

Presenter: CARLSTROM, John (University of Chicago;Argonne National Laboratory)

Session Classification: Snowmass Preparation

Contribution ID: **68**

Type: **not specified**

kSZ x galaxy surveys

Friday, 13 May 2022 08:30 (5 minutes)

Presenter: MADHAVACHERIL, Mathew (Perimeter Institute)

Session Classification: Snowmass Preparation

Contribution ID: **69**

Type: **not specified**

CF6 Q&A

Friday, 13 May 2022 08:35 (5 minutes)

Session Classification: Snowmass Preparation

Contribution ID: 70

Type: **not specified**

Dark matter-baryon scattering with CMB

Friday, 13 May 2022 08:48 (5 minutes)

Presenter: Prof. BODDY, Kimberly (UT Austin)

Session Classification: Snowmass Preparation

Contribution ID: 71

Type: **not specified**

Dark matter physics with CMB-S4

Friday, 13 May 2022 08:40 (8 minutes)

Presenter: DVORKIN, Cora (Harvard University)

Session Classification: Snowmass Preparation

Contribution ID: 72

Type: **not specified**

Ultralight axion dark matter

Friday, 13 May 2022 08:53 (5 minutes)

Presenter: HLOZEK, Renee (University of Toronto)

Session Classification: Snowmass Preparation

Contribution ID: 73

Type: **not specified**

Dark matter-dark radiation interactions

Friday, 13 May 2022 08:58 (5 minutes)

Presenter: Prof. CYR-RACINE, Francis-Yan (University of New Mexico)

Session Classification: Snowmass Preparation

Contribution ID: 74

Type: **not specified**

CF3 Q&A

Friday, 13 May 2022 09:03 (5 minutes)

Session Classification: Snowmass Preparation

Contribution ID: 75

Type: **not specified**

Features in the primordial power spectrum

Friday, 13 May 2022 09:08 (5 minutes)

Presenter: WALLISCH, Benjamin (UC San Diego & Institute for Advanced Study)

Session Classification: Snowmass Preparation

Contribution ID: 76

Type: **not specified**

Primordial non-Gaussianity

Friday, 13 May 2022 09:13 (5 minutes)

Presenter: Prof. MEERBURG, Daan (University of Groningen;)

Session Classification: Snowmass Preparation

Contribution ID: 77

Type: **not specified**

Primordial gravitational waves

Friday, 13 May 2022 09:18 (5 minutes)

Presenter: WU, Kimmy (SLAC National Accelerator Laboratory)

Session Classification: Snowmass Preparation

Contribution ID: 78

Type: **not specified**

Light Relics

Friday, 13 May 2022 09:23 (5 minutes)

Presenter: MEYERS, Joel (Southern Methodist University;)

Session Classification: Snowmass Preparation

Contribution ID: 79

Type: **not specified**

CF5 Q&A

Friday, 13 May 2022 09:28 (5 minutes)

Session Classification: Snowmass Preparation

Contribution ID: **80**

Type: **not specified**

Galaxy clusters and dark energy

Friday, 13 May 2022 09:33 (5 minutes)

Presenter: RAGHUNATHAN, Srinivasan (NCSA)

Session Classification: Snowmass Preparation

Contribution ID: **81**

Type: **not specified**

CMB lensing and dark energy

Friday, 13 May 2022 09:38 (5 minutes)

Presenter: VAN ENGELEN, Alexander (Arizona State University;)

Session Classification: Snowmass Preparation

Contribution ID: **82**

Type: **not specified**

CF4 Q&A

Friday, 13 May 2022 09:43 (5 minutes)

Session Classification: Snowmass Preparation

Contribution ID: **83**

Type: **not specified**

Discussion

Friday, 13 May 2022 09:48 (12 minutes)

Session Classification: Snowmass Preparation

Contribution ID: **84**

Type: **not specified**

CMB lensing x galaxy surveys

Friday, 13 May 2022 08:20 (5 minutes)

Presenter: CHANG, Chihway

Session Classification: Snowmass Preparation