MARCUS and MICRE ice nucleation measurements and possible data plans

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Ice nucleating particle measurements during MARCUS

- 0.2 µm filters
- Alternating 24/48 hour filters
- DNA sequencing
- Released INPs
- Heat, enzymes, etc.

CSU Ice Spectrometer (IS)

- ~60 Filters collected
- Standard processing of all, thermal treatment of 1/3 is funded
- Archived by September 15, 2018
- Reserved samples for genomic analyses, OC removal, ionic analyses, TOC analysis (proposed)
MICRE

- ~104 filters collected of alternate duration of 48 and 72 hours
- Standard processing 50, additional thermal treatment of 20
- Simple INP concentration timelines produced
- Reserved samples for genomic analyses, OC removal, ionic analyses, TOC analysis (proposed)
- Archived by September 30, 2018
Processing data and integrating with AMF suite for MARCUS (proposed; examples from other studies)

T-spectra (w/MAGIC) → Aerosol surface area from size distribution and nephelometry

ACAPEX timeline → parameterization

Levin et al. (2018, in prep for submission)
Processing data and integrating with measurements at MICRE (proposed)

Lidar retrievals (Simon Alexander, AAD) following Mamouri and Ansmann (2015) → Aerosol surface area, >0.5 μm aerosol concentration → McCluskey et al. (2018, in review)

Also available: CPC timeline (CSIRO), MFRSR, Aeronet
Expect extraordinarily clean conditions

![Graph showing temperature and INP (Invisible Nucleation Parameter)]

**Western US 2015**

**Southern Ocean 2016**

**IS_SPL**

**IS_CAPI**

**Brooks et al. (2018, in prep)**

**McCluskey (2017; PhD dissertation) and McCluskey et al. (2018, in prep)**

PLEASE DO NOT REPRODUCE

Paul DeMott (March 2018)