The PACE-MAPP algorithm: **Coupled aerosol and ocean products from combined polarimeter and OCI SWIR measurements**

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**PACE-MAPP is a multi-instrument algorithm:**
- Produce accurate aerosol optical and microphysical properties and ocean properties using SPEXone, HARP2, and OCI (SWIR channels).

**Data sources**
- **PACE**
  - SPEXone
  - HARP2
  - OCI SWIR

**Ancillary**
- Atmosphere pressure thickness
- Trace gas and water vapor profiles

**PACE-MAPP algorithm**

**Bio-optical**
- Homogeneous Spheres + Stratified Spheres (SS)
- bhp and aot spectra

**Aerosol**
- Fine, sea salt, dust (AOD, size, distribution width, CRI)

**Thin cirrus**
- Thin cirrus (COD, size)

**Products**
- Ocean: 5-6 parameters
- Aerosol: 12-14 parameters
- Thin cirrus: 2 parameters

**Validation**
- Airborne (RSP, HSRL)
- Ship-based (NAAMES, SABOR)
- Ground-based (AERONET)

**Aerosol VIS-NIR-SWIR properties:**
- Fine mode (absorbing), sea salt, and dust

**Bio-optical model including Stratified Spheres (SS)**

**Thin cirrus correction**

Collaborate with PACE bio-optics/geochemistry scientists on coastal zones/challenging regions