

Discussion

Interdisciplinary & Synergistic Science Objectives

Carolyn Jordan

University of New Hampshire

Charge to Workshop

- FY10 Planning
- Consideration of Phased Implementation
- Beware of Mission Creep

NRC Decadal Survey

- Lists specific science objectives for coastal ocean biophysics (COB) and atmospheric-pollution chemistry (APC), *but does not specify interdisciplinary objectives*
- Explicitly mentions exploring compatibility with objectives of terrestrial biophysical sciences
- Does this implicitly suggest there is an expectation for us to explore interdisciplinary questions between COB & APC?

FY10 Planning

- If we prepare an Interdisciplinary STM, how do we prioritize the requirements?

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

Associated with Biologically Active Regions of Ocean
Seasonal Cycle

Lofting in ITCZ may make ocean important FT source
Vrekoussis et al., ACP, 9, 4485-4504, 2009.

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

Global map of red fluorescent light emitted by phytoplankton
from Aqua/MODIS/Mike Behrenfeld, Oregon State University.
Behrenfeld et al., Biogeosciences, 6, 779-794, 2009.

N. Atlantic MBL Aerosols

Winter

- Modal diameters
 - 0.031 μm - Aitken
 - 0.103 μm - accumulation
 - 2 μm - coarse
- Higher wind speeds - more sea salt
- 30% larger coarse fraction mass
- Scattering Maximum (21 Mm^{-1})
- Smaller Angstrom parameters
- Minimum WSOC $<0.05 \mu\text{gC m}^{-3}$

Summer

- Modal diameters
 - 0.049 μm - Aitken
 - 0.177 μm - accumulation
 - 2 μm - coarse
- Larger Accumulation Mass
- Scattering Minimum (5.5 Mm^{-1})
- Larger Angstrom parameters
- Maximum WSOC $0.2 \mu\text{gC m}^{-3}$

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

SeaWIFS Chlorophyll *a*

Yoon et al., JGR, 112,D04206,
doi:10.1029/2005JD007044, 2007.

Role of Halogens in Coastal Air Quality?

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

Annually averaged BL coarse mode aerosol pH for year 2000
Kerckweg et al., ACP, 8, 5899-5917, 2008.

