Discrete DMS/P measurements, Production rates and the Influence of light/UV

Andy Hind and Carlton Rauschenberg, Bigelow Laboratory for Ocean Sciences
Aims:

Compare DMS (dimethyl sulphide) and its precursor DMSP (dimethylsulfoniopropionate) production inside and outside of POCs and filaments of upwelled water
Measurements we’re making on the Ron Brown:

**Discrete DMS** (dimethyl sulphide), **DMSP** (dimethylsulfoniopropionate)

**Chlorophyll fluorescence**

**DMS/DMSP production rates**

Light, 300-800 nm

**Nutrient measurements** at Bigelow
• DMS thought to be an important source of CCN, at least in remote ocean regions

• Major source of acidity in the atmosphere

• Large flux of S

• May drive ocean $\Rightarrow$ atmosphere $\text{NH}_x$ flux $\Rightarrow$ influence on marine and terrestrial productivity
DMS is a breakdown product of DMSP which is made by phytoplankton...

Uses?
– Osmolyte
– Anti-oxidant?
– Grazing defence?
– Viral defence?
DMS production is complex and not terribly well understood...

From Simo, 2001
Increasing DMSP production

Cells fried

Increasing radiation

T=0
DARK CONTROL
No UV, mesh
UV, mesh
No UV, no mesh
UV, no mesh

nM

DMS
DMSP dissolved
DMSP particulate
Thanks…

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