

Core Theme 4

STRATOSPHERE

TROPOSPHERE

Free troposphere

Cloud condensation nuclei

Aerosols

Organic gases

Breaking wave

Energy and mass exchange

Bubbles

Sea ice

Turbulence

Core Theme 2

Core Theme 1

Carbon export

CO₂ N₂O CH₄
DMS

Gas exchange

Sea surface microlayer

Deoxygenation
Ocean acidification

nutrient cycling

Ecosystems

Core Theme 5

Ozone destruction

Ozone destruction

Oxidation capacity

Halogens
Br, I

Emissions,
Dust,
Pollutants



Mixing - aging

Ship emissions

Dust

Upwelling

Core Theme 3