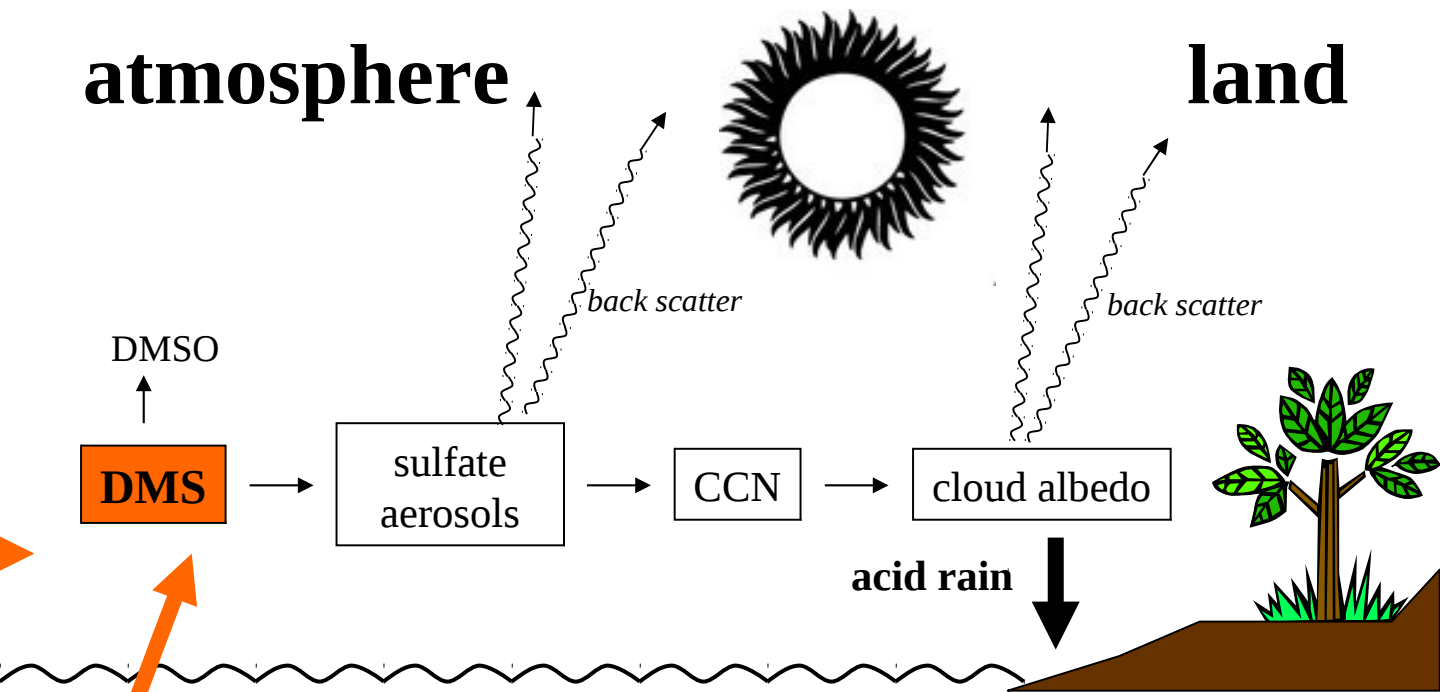


atmosphere

land



DMSO

DMS

sulfate
aerosols

CCN

cloud albedo

acid rain



cleavage pathway
(15 – 50 %)

demethylation/dethiolation pathway
(50 – 85 %)

methionine

marine
phytoplankton
DMSP

DMSP lyase

1st demethylation

DMS + acrylate

MMPA + X-CH₃

DMSO

β-HP

dethiolation

2nd demethylation

biomass

MeSH + acrylate

MPA + X-CH₃

sulfide

methionine

biomass

biomass

biomass

ocean