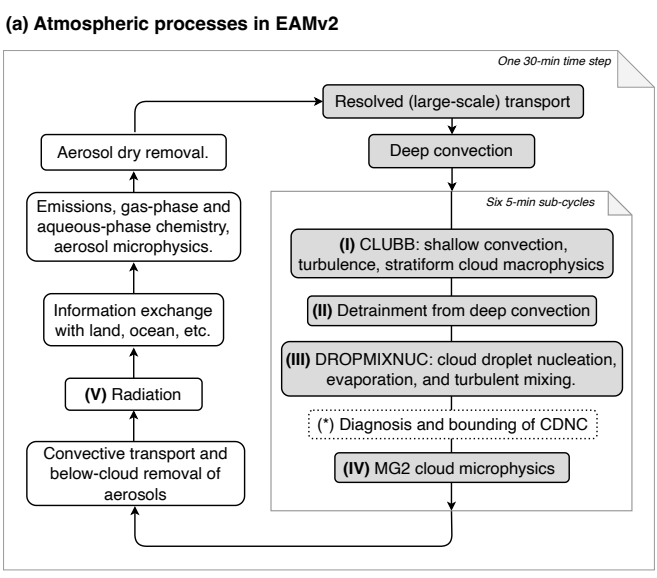
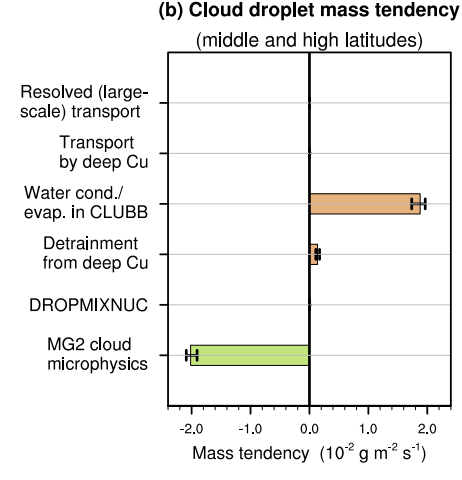
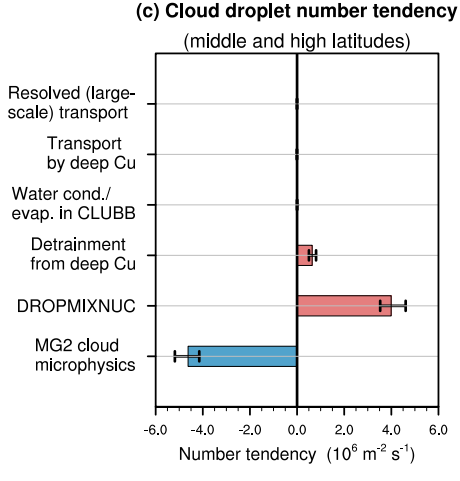

(a) Atmospheric processes in EAMv2
One 30-min time step
Resolved (large-scale) transport
Deep convection
Six 5-min sub-cycles
(I) CLUBB: shallow convection, turbulence, stratiform cloud macrophysics
(II) Detrainment from deep convection
(III) DROPMIXNUC: cloud droplet nucleation, evaporation, and turbulent mixing.
(*) Diagnosis and bounding of CDNC
(IV) MG2 cloud microphysics
Aerosol dry removal.
Emissions, gas-phase and aqueous-phase chemistry, aerosol microphysics.
Information exchange with land, ocean, etc.
(V) Radiation
Convective transport and below-cloud removal of aerosols


(b) Cloud droplet mass tendency
(middle and high latitudes)
Resolved (large-scale) transport
Transport by deep Cu
Water cond./ evap. in CLUBB
Detrainment from deep Cu
DROPMIXNUC
MG2 cloud microphysics
-2.0
-1.0
0.0
1.0
2.0
Mass tendency (10^-2 g m^-2 s^-1)


(c) Cloud droplet number tendency
(middle and high latitudes)
Resolved (large-scale) transport
Transport by deep Cu
Water cond./ evap. in CLUBB
Detrainment from deep Cu
DROPMIXNUC
MG2 cloud microphysics
-6.0
-4.0
-2.0
0.0
2.0
4.0
6.0
Number tendency (10^6 m^-2 s^-1)