

Treatment of "vegetation" fields in GenPhysX -> GEM -> CLASS

Input to GenPhysX
original n fields

GenPhysX

Input to GEM
26 fields

GEM

Input to surface
4 + 6 fields

CLASS
(6 fields)

2x2 fields

CLASS

GEM

split at every timestep

open ocean
sea ice
glaciers
lakes

land surface (CLASS, 6 fields)

3. aggregation of fractions & physical properties

aggregation of
- fluxes
- roughness length
- diagnostic fields

1. aggregation of fractions

2. aggregation of fractions & physical properties (from look-up tables)

CLASS
separate calculation of
- fluxes
- roughness length
- diagnostic fields
for 4 classes below

split at every timestep

canopy without snow
canopy with snow

aggregated
- fluxes
- roughness length
- diagnostic fields
back to GEM

split at every timestep

bare soil without snow
bare soil with snow

original n fields

1 ocean
2 glaciers
3 lakes

4 evergreen needle-leaf trees
6 deciduous needle-leaf trees
25 mixed wood forest

5 evergreen broadleaf trees
7 deciduous broadleaf trees
8 tropical broadleaf trees
9 draught deciduous trees
11 deciduous shrubs

15 crops
16 rice
17 sugar
18 corn
19 cotton
20 irrigated crops

10 evergreen broadleaf shrubs
12 thorn shrubs
13 short grass and forbs
14 long grass
22 tundra
23 swamp
26 mixed shrubs

21 urban

24 desert / bare soil

needle-leaf

broadleaf

crops

grass

urban

bare soil

50 %

50 %