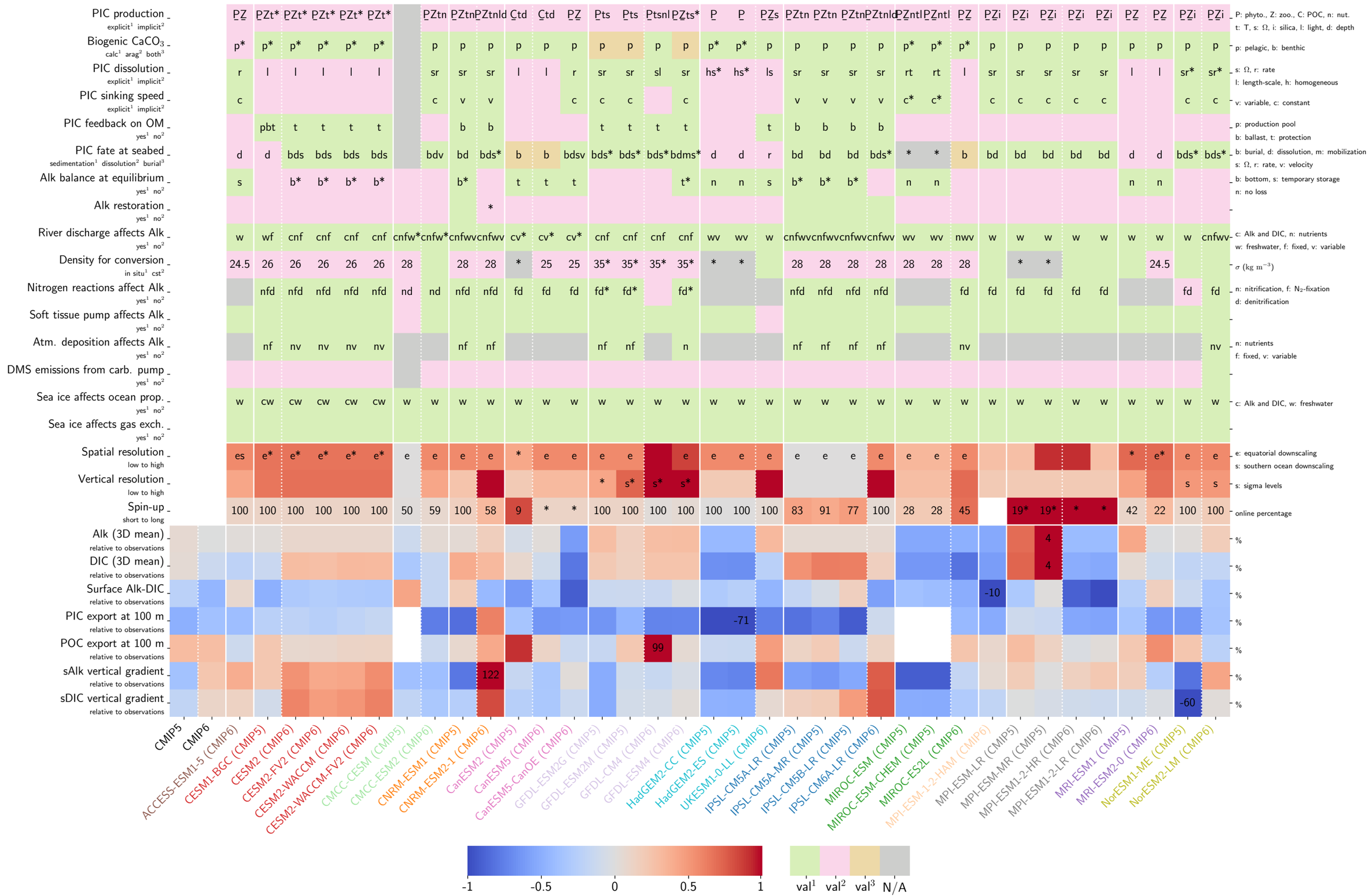
PIC production
explicit[1] implicit[2]
Biogenic CaCO3
calc[1] arag[2] both[3]
PIC dissolution
explicit[1] implicit[2]
PIC sinking speed
explicit[1] implicit[2]
PIC feedback on OM
yes[1] no[2]
PIC fate at seabed
sedimentation[1] dissolution[2] burial[3]
Alk balance at equilibrium
yes[1] no[2]
Alk restoration
yes[1] no[2]
River discharge affects Alk
yes[1] no[2]
Density for conversion
in situ[1] cst[2]
Nitrogen reactions affect Alk
yes[1] no[2]
Soft tissue pump affects Alk
yes[1] no[2]
Atm. deposition affects Alk
yes[1] no[2]
DMS emissions from carb. pump
yes[1] no[2]
Sea ice affects ocean prop.
yes[1] no[2]
Sea ice affects gas exch.
yes[1] no[2]
Spatial resolution
low to high
Vertical resolution
low to high
Spin-up
short to long
Alk (3D mean)
relative to observations
DIC (3D mean)
relative to observations
Surface Alk-DIC
relative to observations
PIC export at 100 m
relative to observations
POC export at 100 m
relative to observations
sAlk vertical gradient
relative to observations
sDIC vertical gradient
relative to observations
P: phyto., Z: zoo., C: POC, n: nut.
t: T, s: Ω, i: silica, l: light, d: depth
p: pelagic, b: benthic
s: Ω, r: rate
l: length-scale, h: homogeneous
v: variable, c: constant
p: production pool
b: ballast, t: protection
b: burial, d: dissolution, m: mobilization
s: Ω, r: rate, v: velocity
b: bottom, s: temporary storage
n: no loss
c: Alk and DIC, n: nutrients
w: freshwater, f: fixed, v: variable
σ (kg m−3)
n: nitrification, f: N2-fixation
d: denitrification
n: nutrients
f: fixed, v: variable
c: Alk and DIC, w: freshwater
e: equatorial downscaling
s: southern ocean downscaling
s: sigma levels
online percentage
%
CMIP5
CMIP6
ACCESS-ESM1-5 (CMIP6)
CESM1-BGC (CMIP5)
CESM2 (CMIP6)
CESM2-FV2 (CMIP6)
CESM2-WACCM (CMIP6)
CESM2-WACCM-FV2 (CMIP6)
CMCC-CESM (CMIP5)
CMCC-ESM2 (CMIP6)
CNRM-ESM1 (CMIP5)
CNRM-ESM2-1 (CMIP6)
CanESM2 (CMIP5)
CanESM5 (CMIP6)
CanESM5-CanOE (CMIP6)
GFDL-ESM2G (CMIP5)
GFDL-ESM2M (CMIP5)
GFDL-CM4 (CMIP6)
GFDL-ESM4 (CMIP6)
HadGEM2-CC (CMIP5)
HadGEM2-ES (CMIP5)
UKESM1-0-LL (CMIP6)
IPSL-CM5A-LR (CMIP5)
IPSL-CM5A-MR (CMIP5)
IPSL-CM5B-LR (CMIP5)
IPSL-CM6A-LR (CMIP6)
MIROC-ESM (CMIP5)
MIROC-ESM-CHEM (CMIP5)
MIROC-ES2L (CMIP6)
MPI-ESM-1-2-HAM (CMIP6)
MPI-ESM-LR (CMIP5)
MPI-ESM-MR (CMIP5)
MPI-ESM1-2-HR (CMIP6)
MPI-ESM1-2-LR (CMIP6)
MRI-ESM1 (CMIP5)
MRI-ESM2-0 (CMIP6)
NorESM1-ME (CMIP5)
NorESM2-LM (CMIP6)
-1
-0.5
0
0.5
1
val[1] val[2] val[3] N/A