

Coupled model

(IPSL-CM6A-LR)

Atmosphere (LMDz)

qt
 $= qsr + qns$

$-emp$

$utau, vtau$

$hflx_isf$

$hflx_rnf$

$iceshelf$

$friver$
 $+ iceberg$
 $= runoffs$

Liquid **ocean**
(OPA)

qt

$-emp$

$utau, vtau$

sfx

chl

Sea-ice
(LIM3)

Biogch
(PISCES)

NEMO3.6

$hfgeou$

→ Heat → Freshwater → Salt → Momentum → Chlorophyll