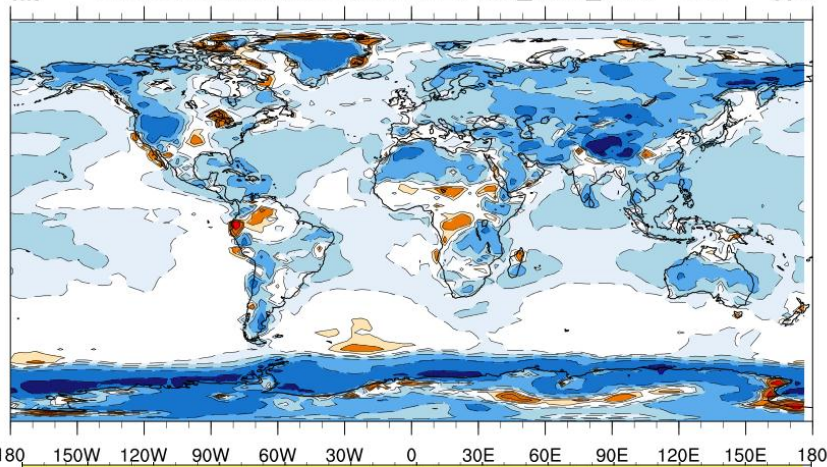
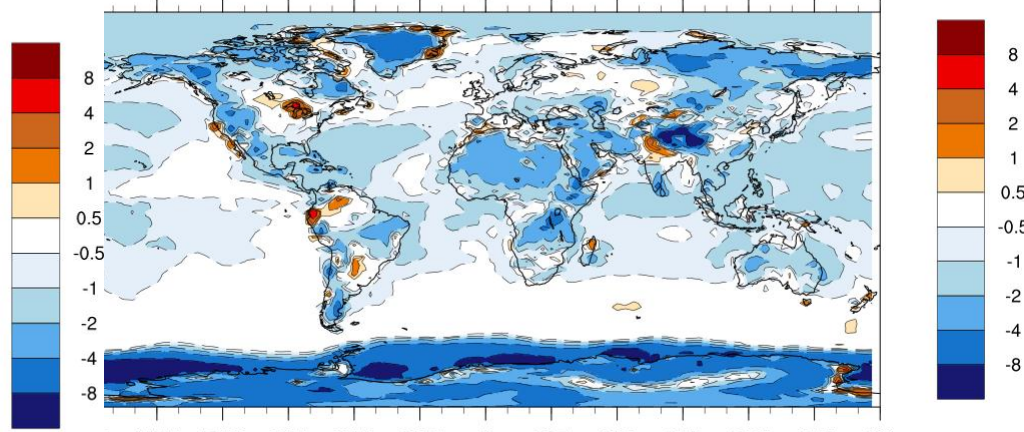


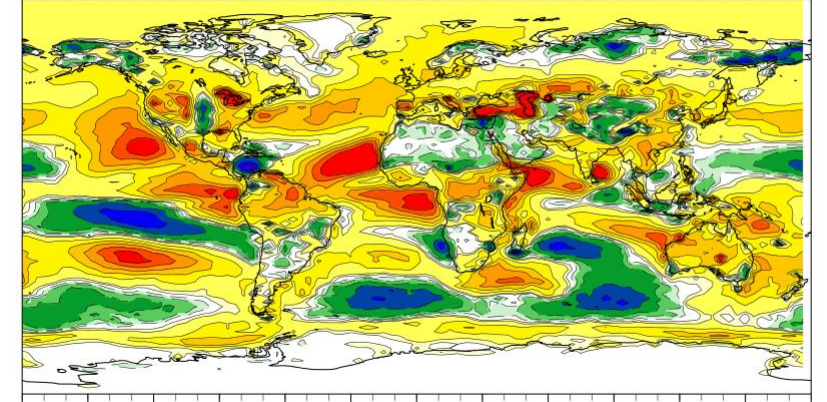
tas CL4.CWRR90msnowSu.3607.L2546m_1981_1990 - OBS JJA



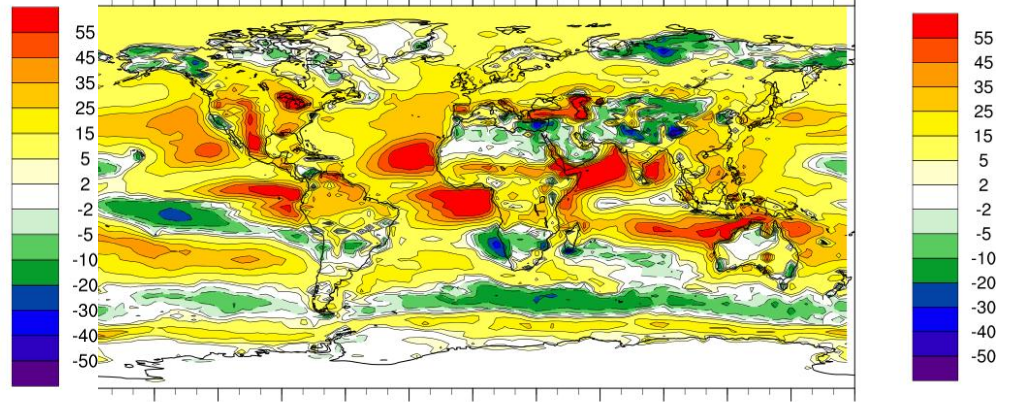
tas CL5.CWRR90msnowSu.3607.L2546m_1981_1990 - OBS JJA



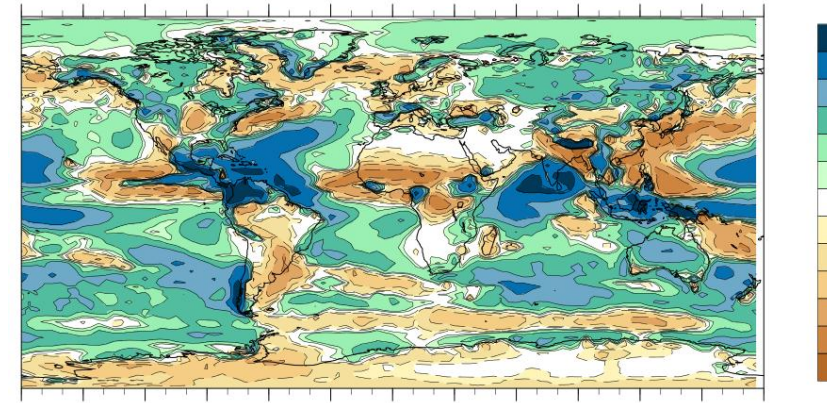
fls CL4.CWRR90msnowSu.3607.L2546m_1981_1990 - OBS JJA



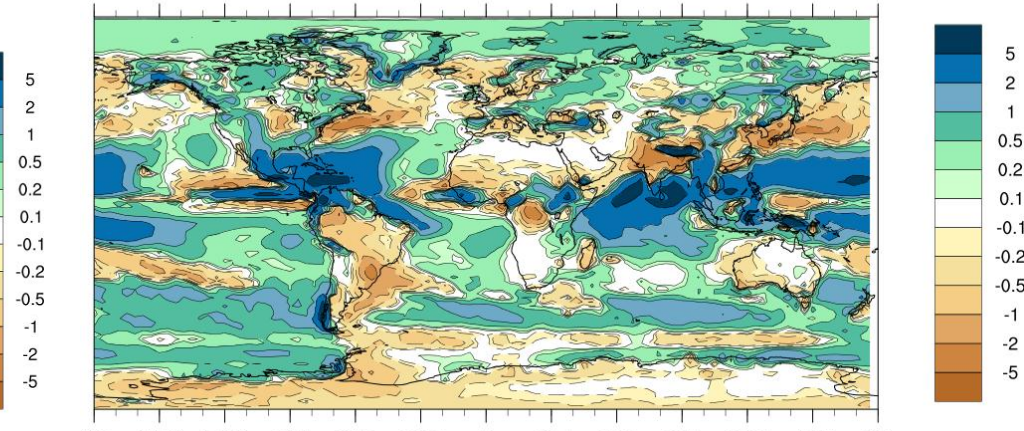
fls CL5.CWRR90msnowSu.3607.L2546m_1981_1990 - OBS JJA



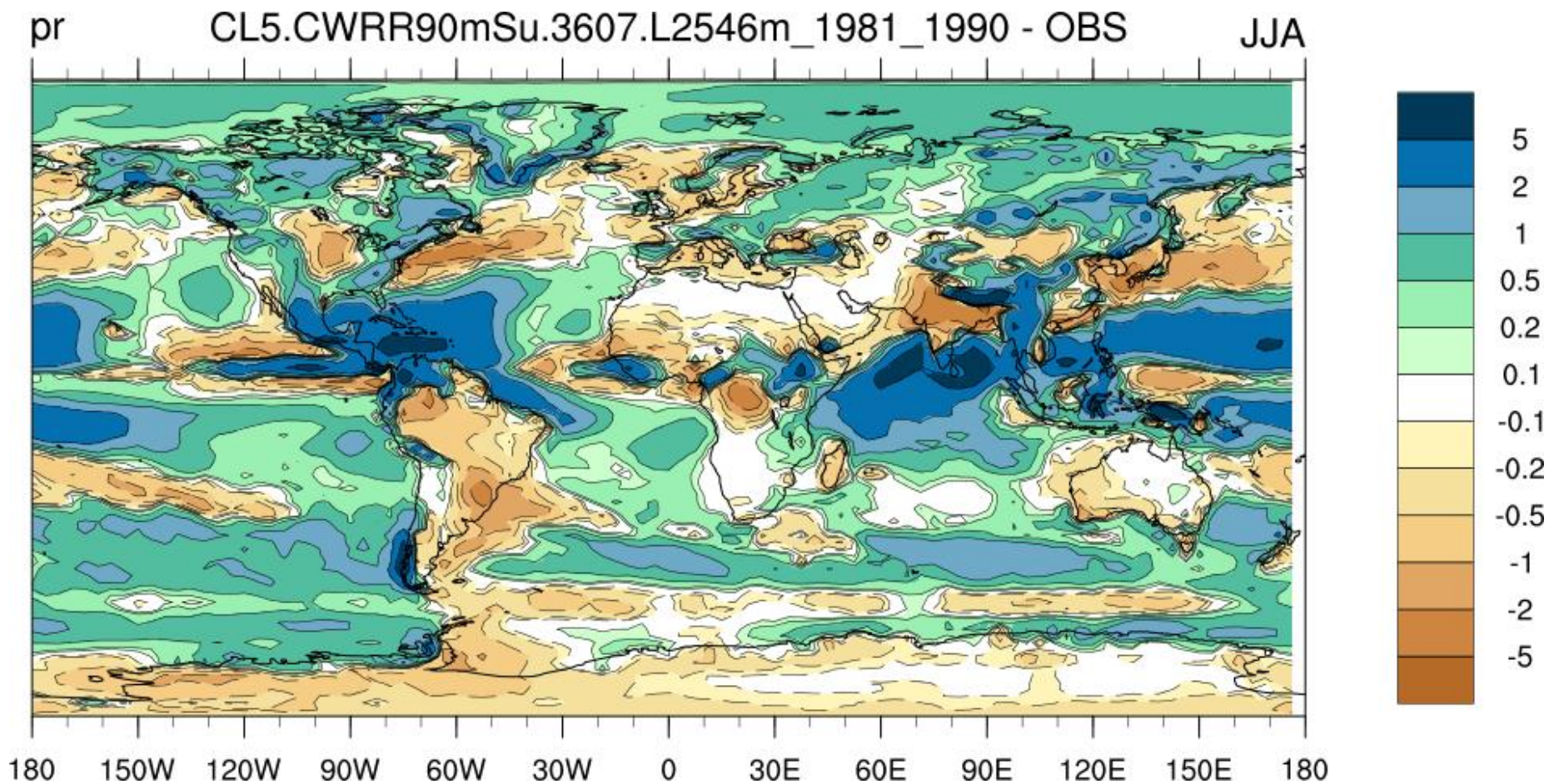
pr CL4.CWRR90msnowSu.3607.L2546m_1981_1990 - OBS JJA



pr CL5.CWRR90msnowSu.3607.L2546m_1981_1990 - OBS JJA



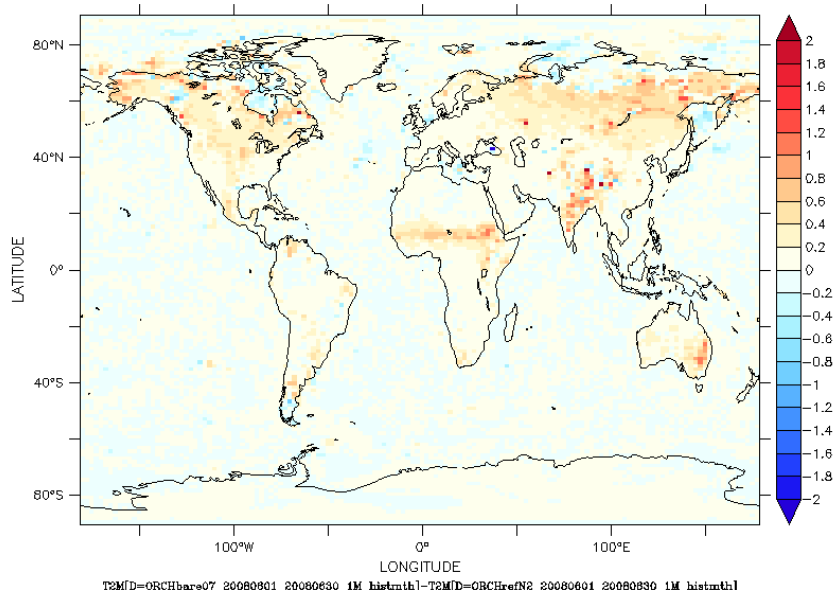
- PRECIP/EVAPORATION en été difficile de départager l'oeuf et la poule, Mais en Afrique de l'Ouest, et tropicale, plutôt sous. estimation precip et sur. estimation évaporation. (je ne me souviens plus si on a vu des choses sur les simulations ORCHIDEE forcées).



- Test fraction de sol nu.

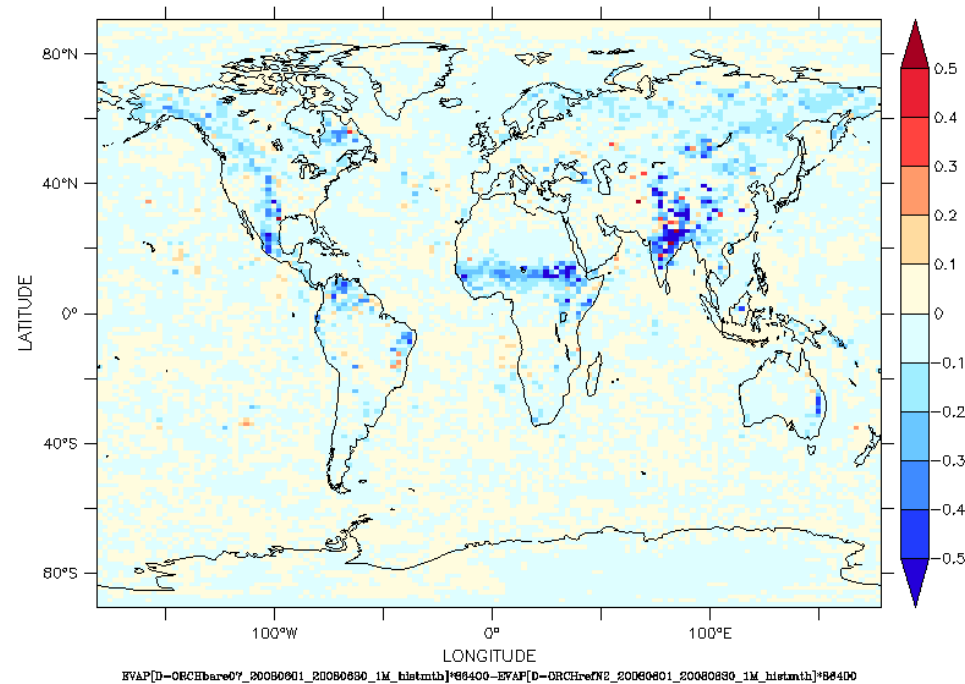
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NOVA/PMEL TRAP
08-NOV-2016 05:27:19

TIME : 16-JUN-2008 00:00 NOLEAP

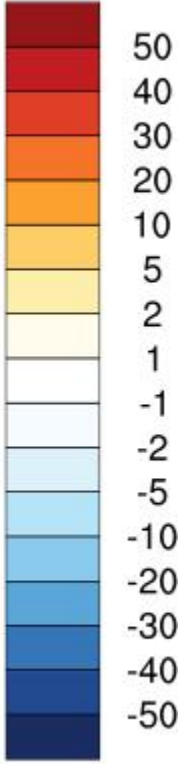
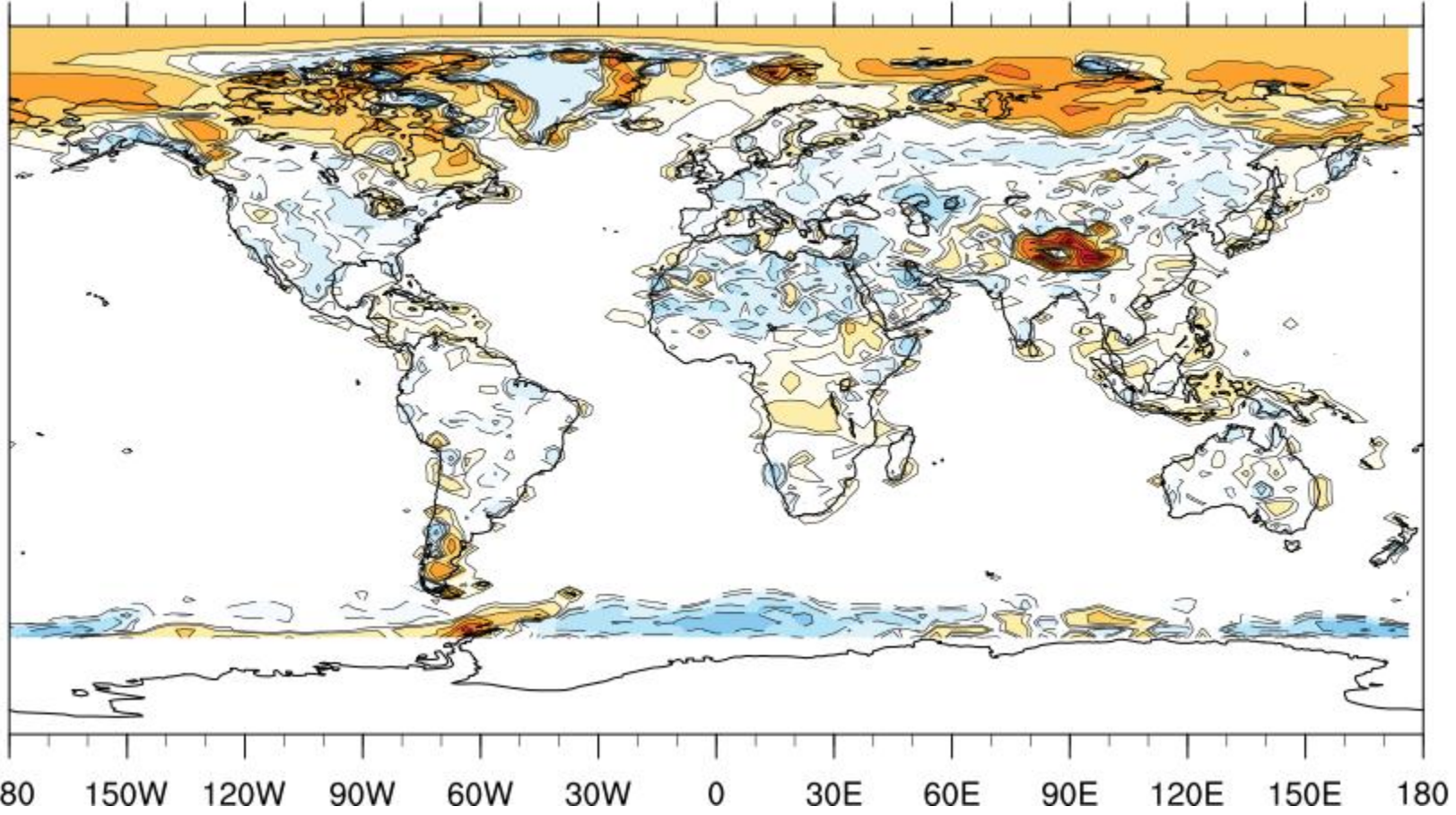


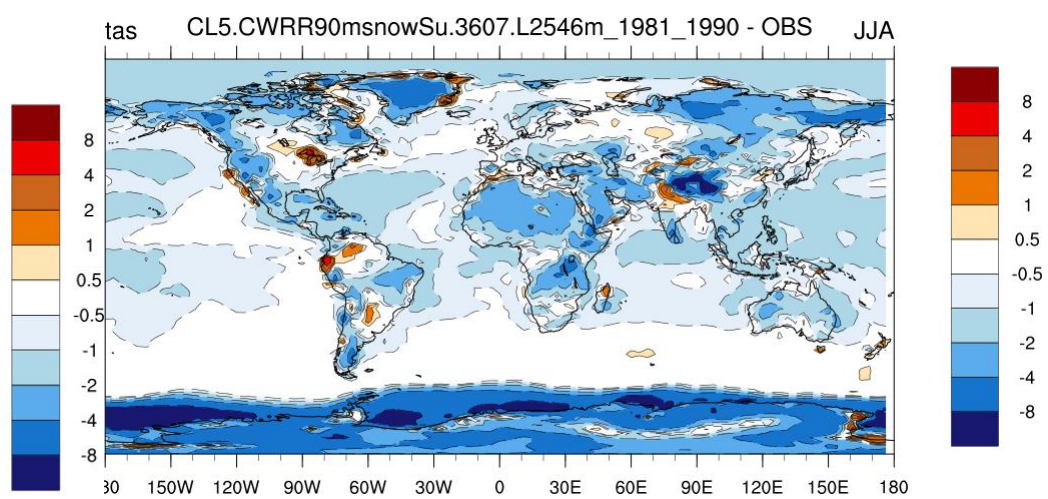
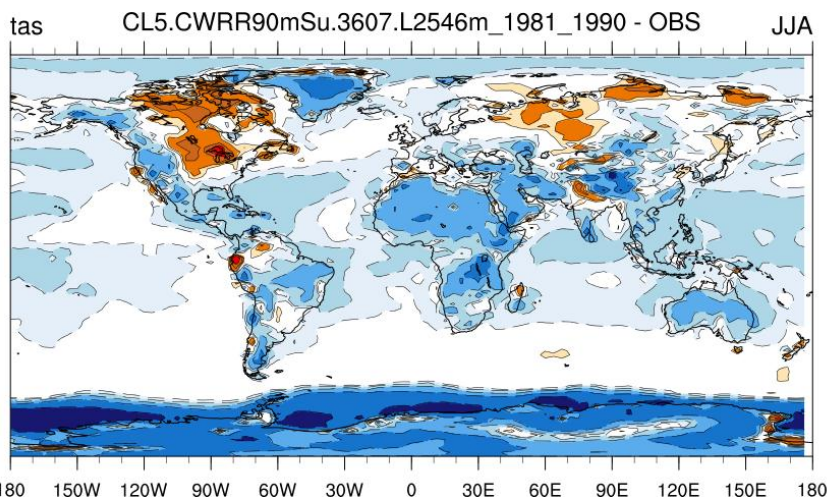
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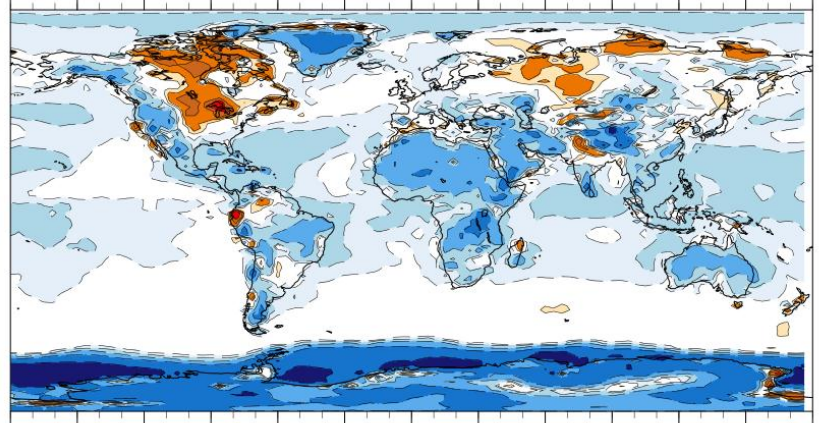


albs CL5.CWRRcSu.3607.L2546m_1981_1990 - OBS JJA

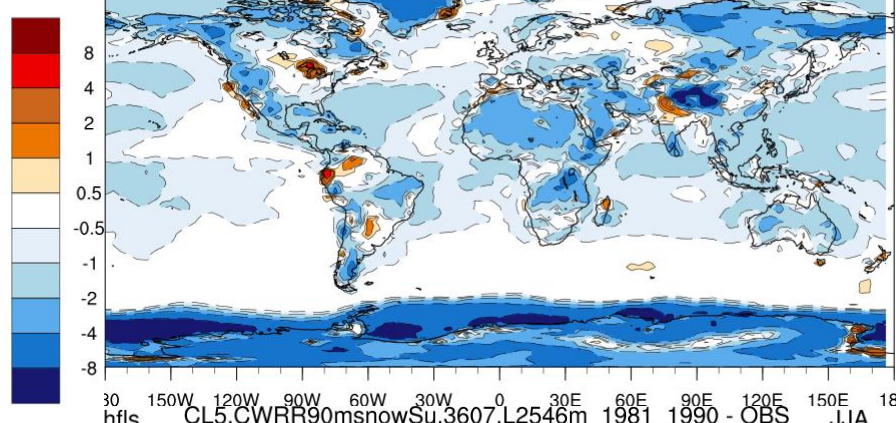




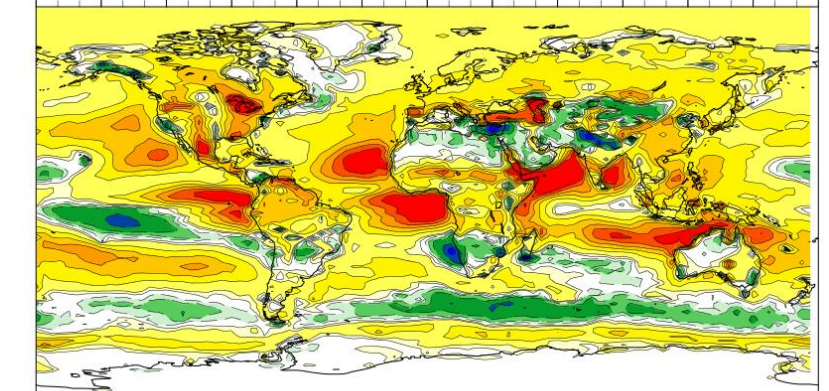
tas CL5.CWRR90mSu.3607.L2546m_1981_1990 - OBS JJA



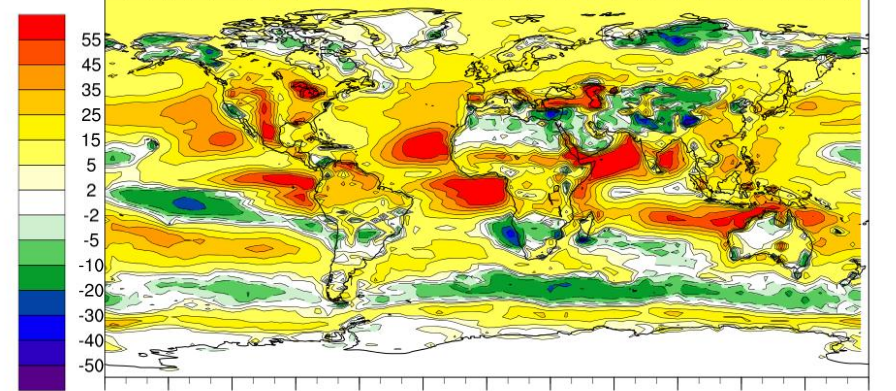
tas CL5.CWRR90msnowSu.3607.L2546m_1981_1990 - OBS JJA



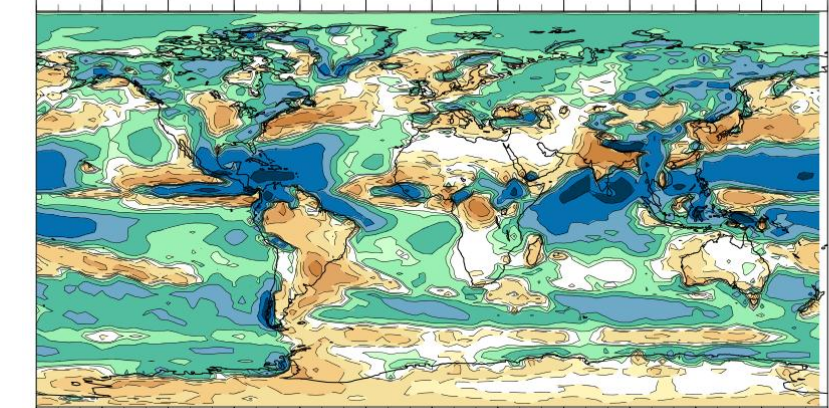
hfs CL5.CWRR90mSu.3607.L2546m_1981_1990 - OBS JJA



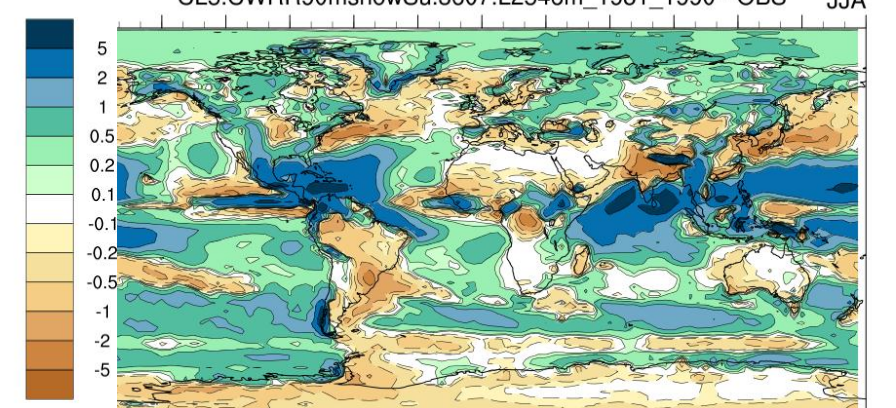
hfs CL5.CWRR90msnowSu.3607.L2546m_1981_1990 - OBS JJA



pr CL5.CWRR90mSu.3607.L2546m_1981_1990 - OBS JJA



pr CL5.CWRR90msnowSu.3607.L2546m_1981_1990 - OBS JJA

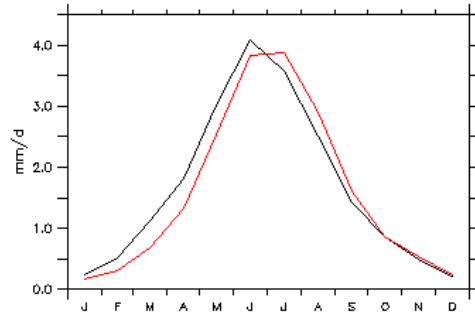


180 150W 120W 90W 60W 30W 0 30E 60E 90E 120E 150E 180

180 150W 120W 90W 60W 30W 0 30E 60E 90E 120E 150E 180

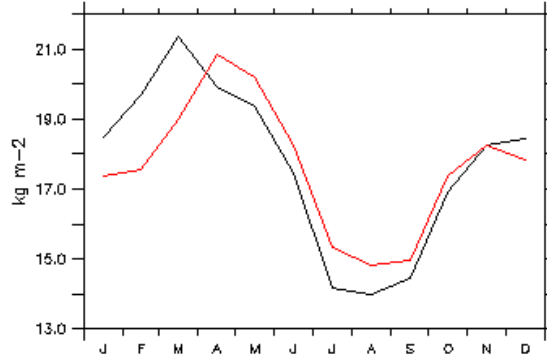
Ancienne /nouvelle neige

LONGITUDE : 115W(-115) to 82W(-82) (XY ave)
 LATITUDE : 40N to 50N (XY ave)
 CALENDAR: NOLEAP



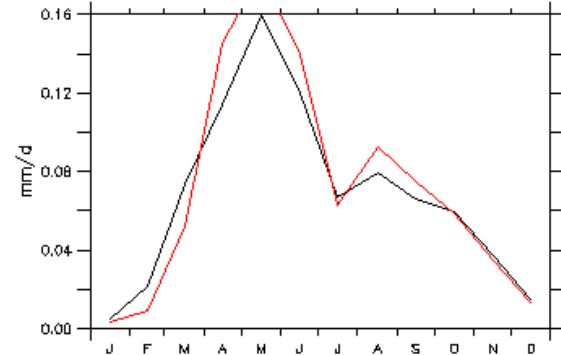
Evaporation (mm/d)

LONGITUDE : 115W(-115) to 82W(-82) (XY ave)
 LATITUDE : 40N to 50N (XY ave)
 CALENDAR: NOLEAP



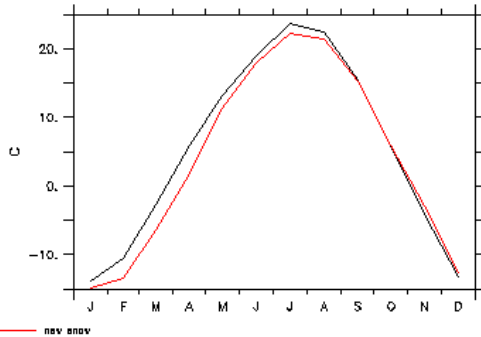
Moisture in Upper 0.1 m of Soil Column (kg m⁻²)

LONGITUDE : 115W(-115) to 82W(-82) (XY ave)
 LATITUDE : 40N to 50N (XY ave)
 CALENDAR: NOLEAP



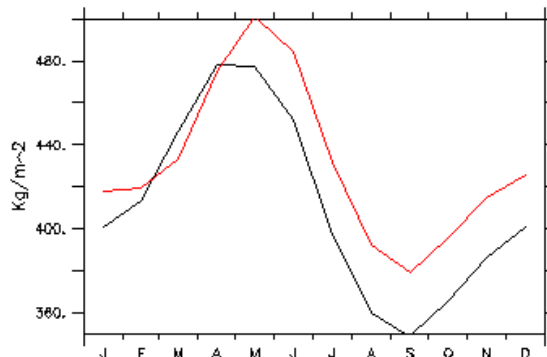
Surface runoff (mm/d)

LONGITUDE : 115W(-115) to 82W(-82) (XY ave)
 LATITUDE : 40N to 50N (XY ave)
 CALENDAR: NOLEAP



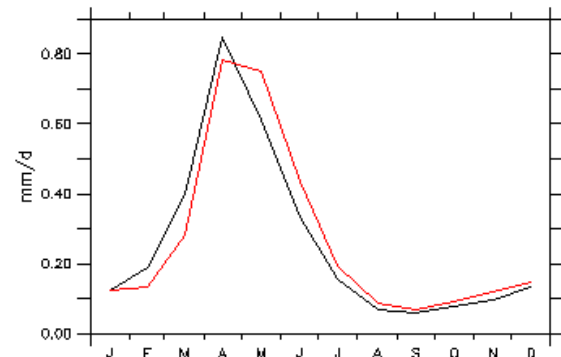
New Surface Temperature (C)

LONGITUDE : 115W(-115) to 82W(-82) (XY ave)
 LATITUDE : 40N to 50N (XY ave)
 CALENDAR: NOLEAP



Total soil Moisture (Kg/m²)

LONGITUDE : 115W(-115) to 82W(-82) (XY ave)
 LATITUDE : 40N to 50N (XY ave)
 CALENDAR: NOLEAP

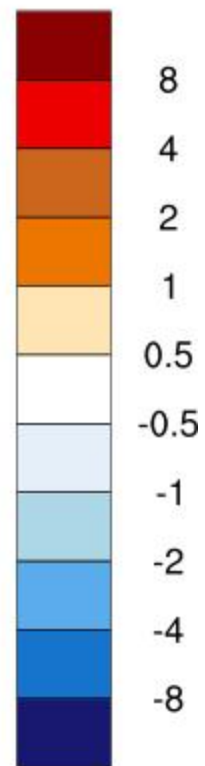
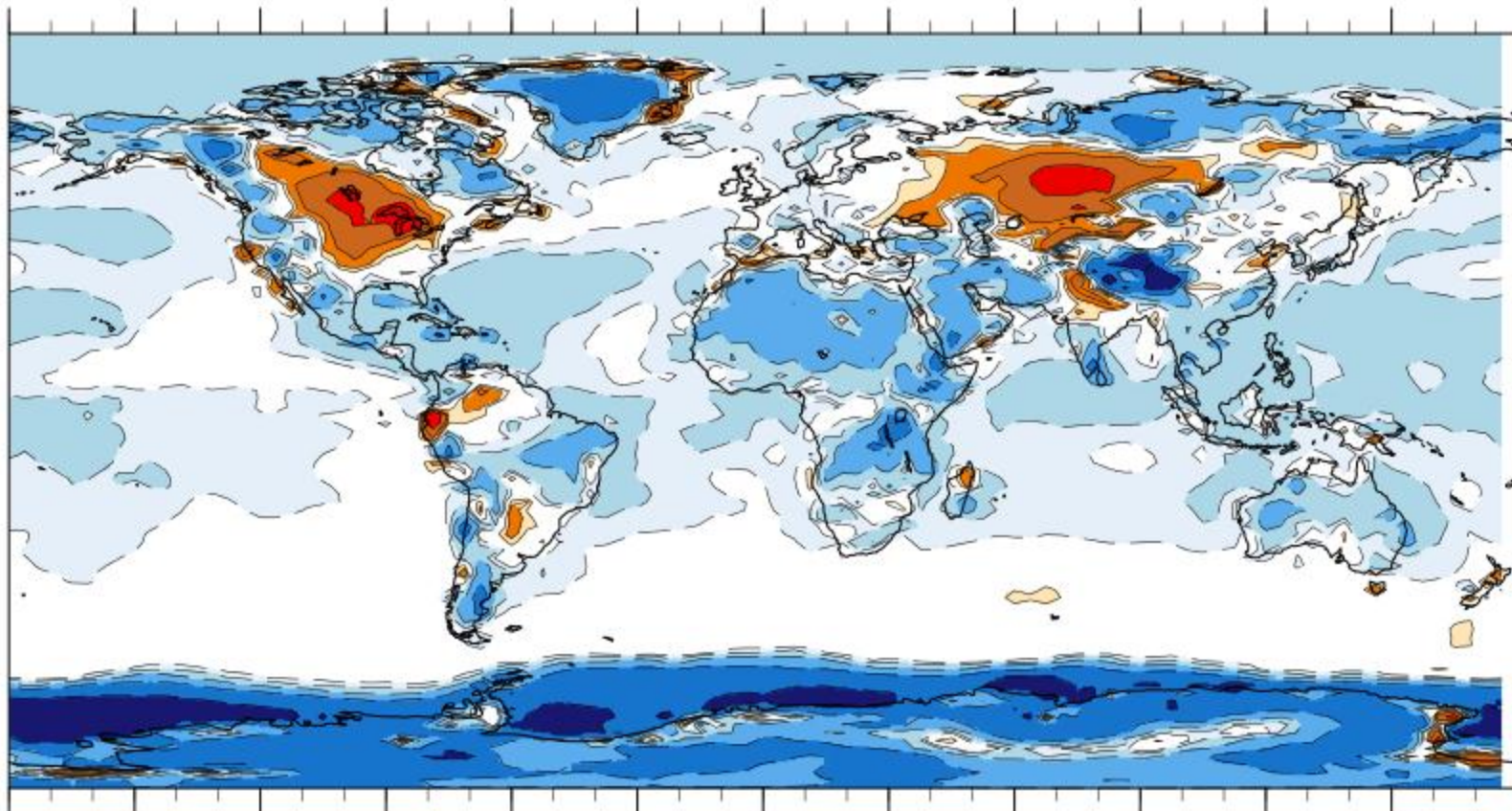


Deep drainage (mm/d)

tas

CL5.CWRRcSu.3607.L2546m_1981_1990 - OBS

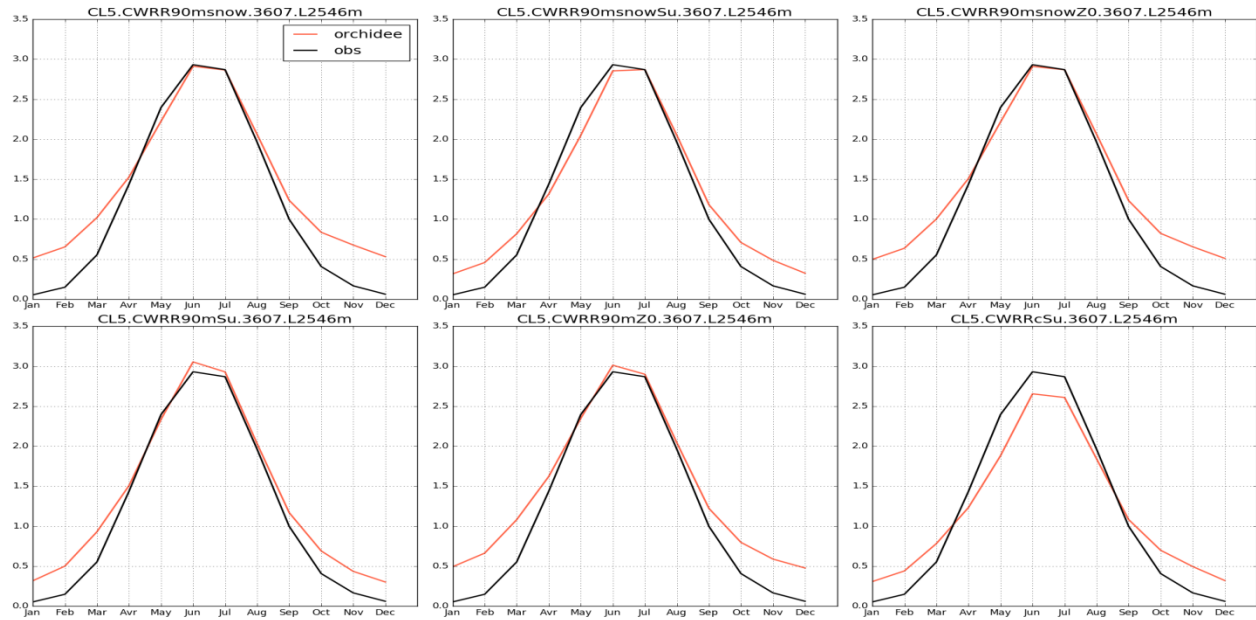
JJA



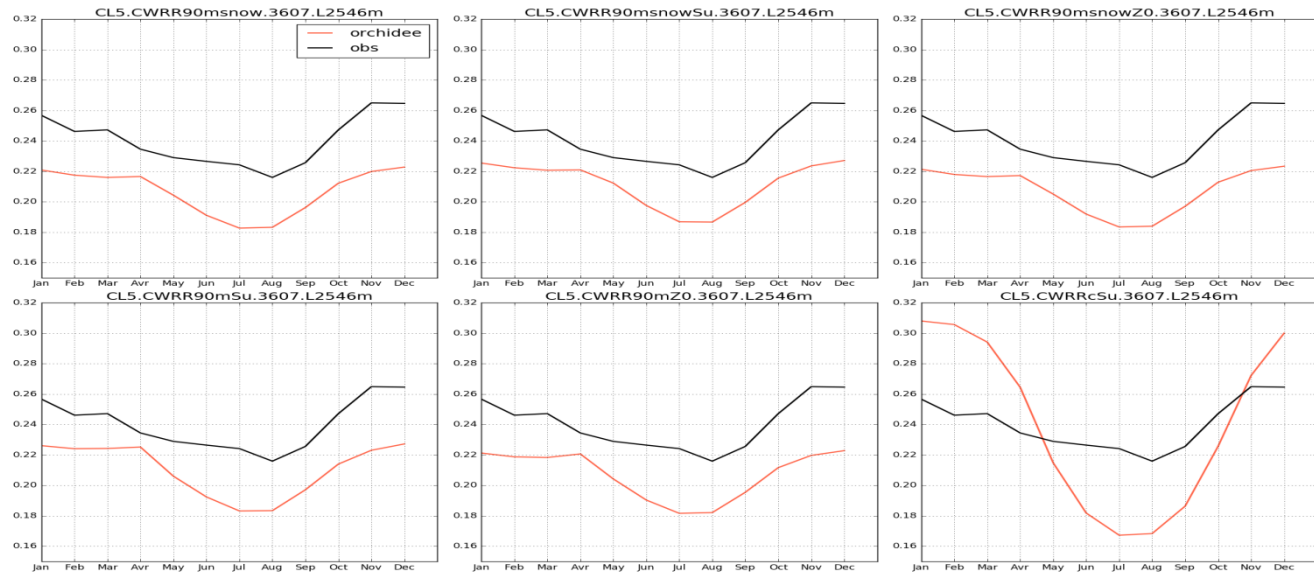
180 150W 120W 90W 60W 30W 0 30E 60E 90E 120E 150E 180

EUROPE

Seasonal cycle of evap [mm/day]

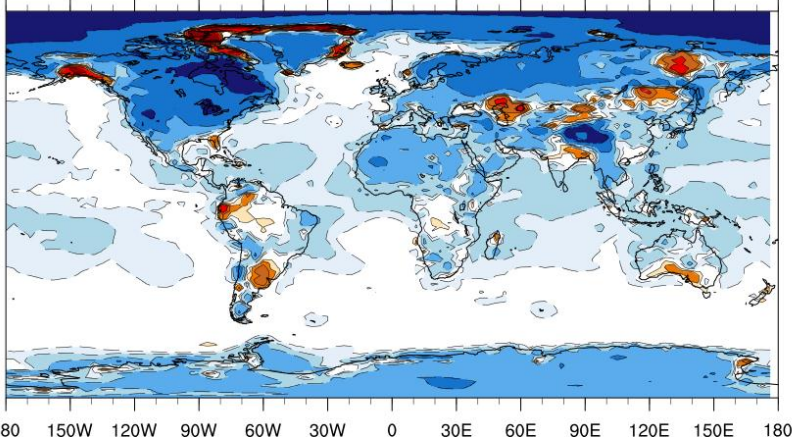


Seasonal cycle of mrsos [m3/m3]

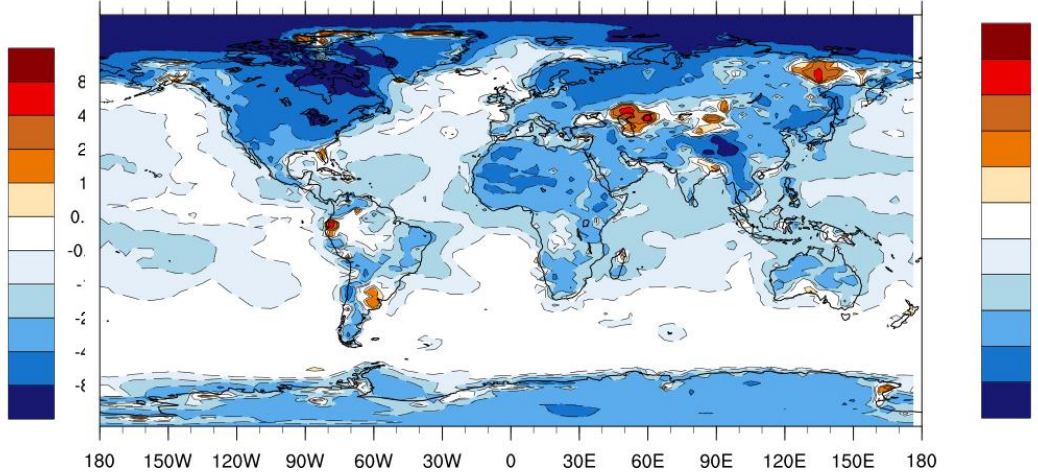


- TEMPERATURE: Biais froid partout. Sur les moyennes latitudes le biais ESTIVAL est très sensible au schéma de neige et à l'activation du gel du sol. Le nouveau schéma de neige accroît l'évap en été (refroidit), le gel du sol la décroît (réchauffe) .

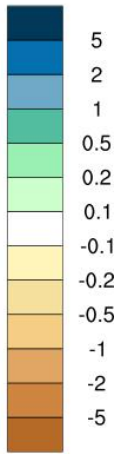
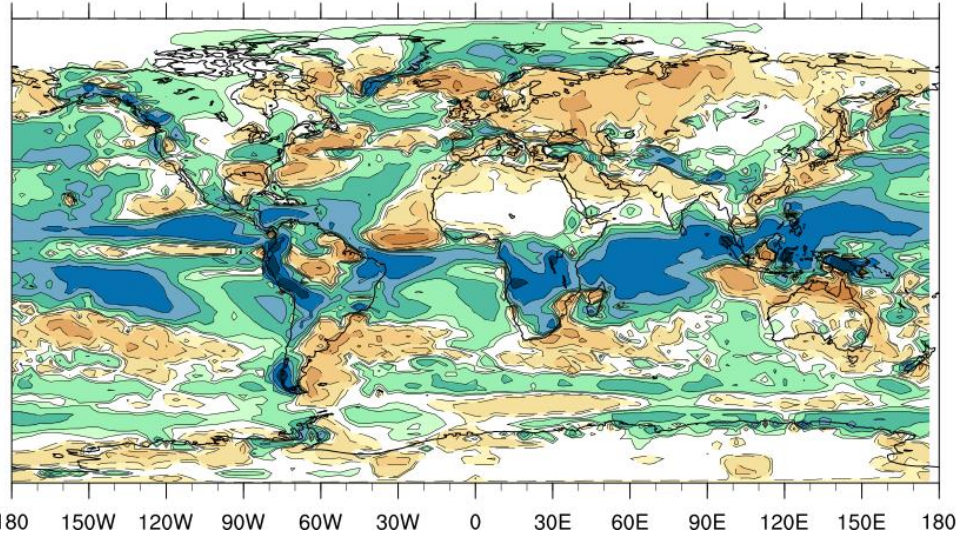
tas CL5.CWRR90msnowSu.3607.L2546m_1981_1990 - OBS DJF



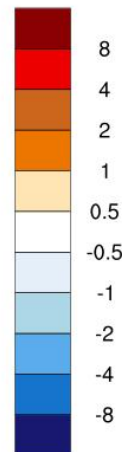
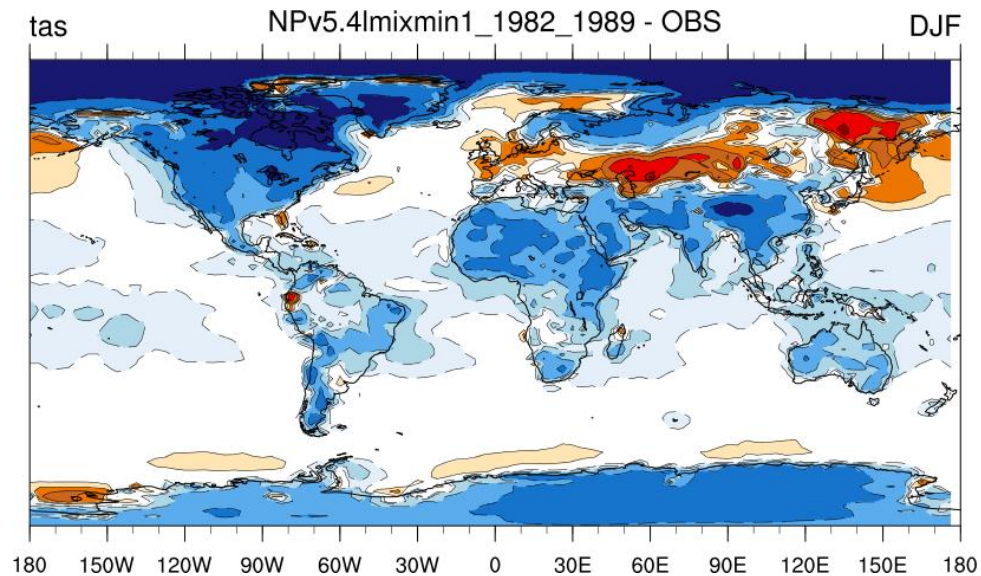
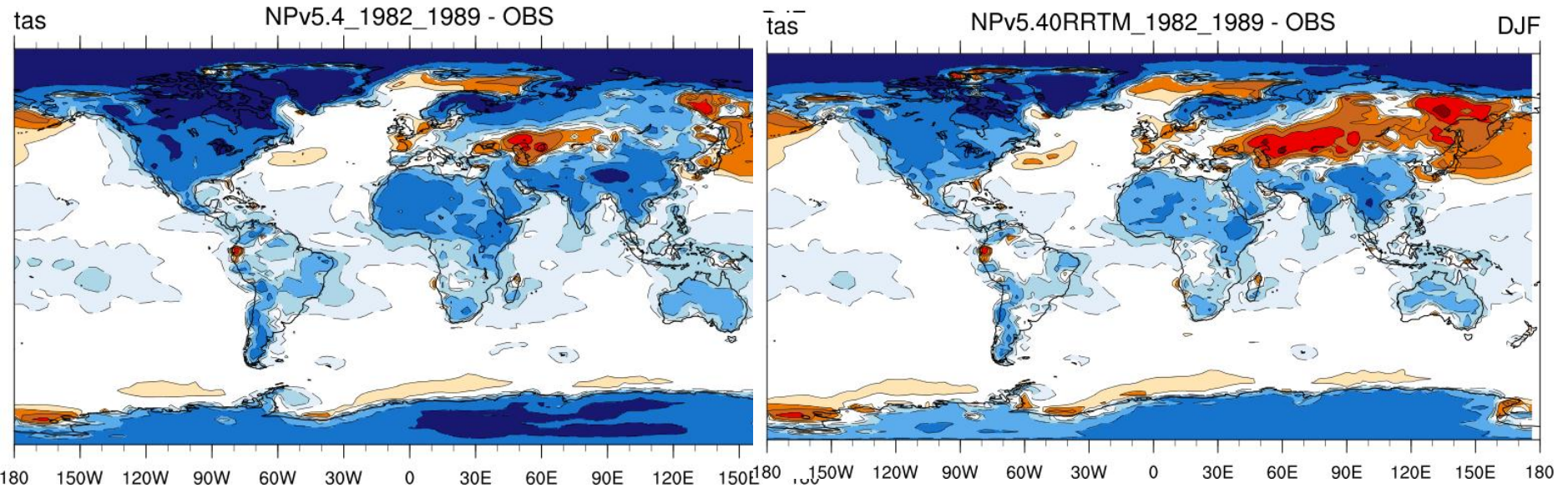
tas CL5.CWRR90mZ0.3607.L2546m_1981_1990 - OBS DJF



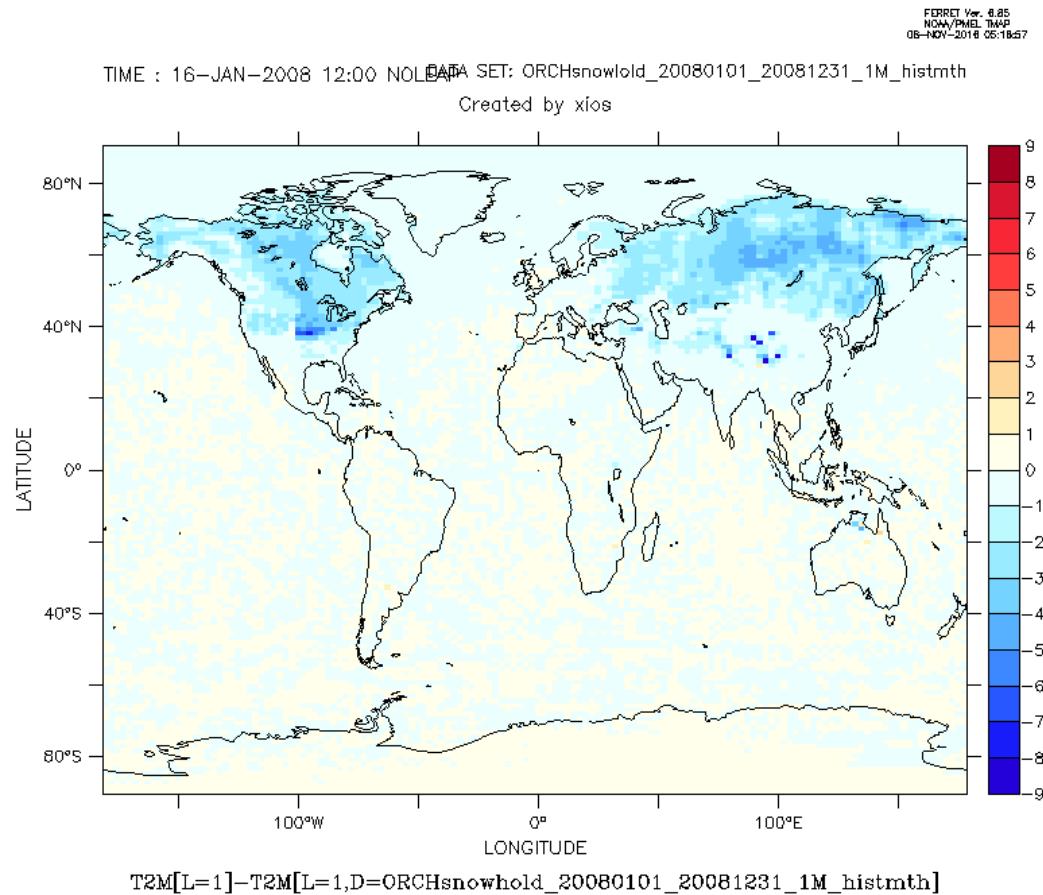
pr CL5.CWRR90msnowSu.3607.L2546m_1981_1990 - OBS DJF



Couche limite + RRTM

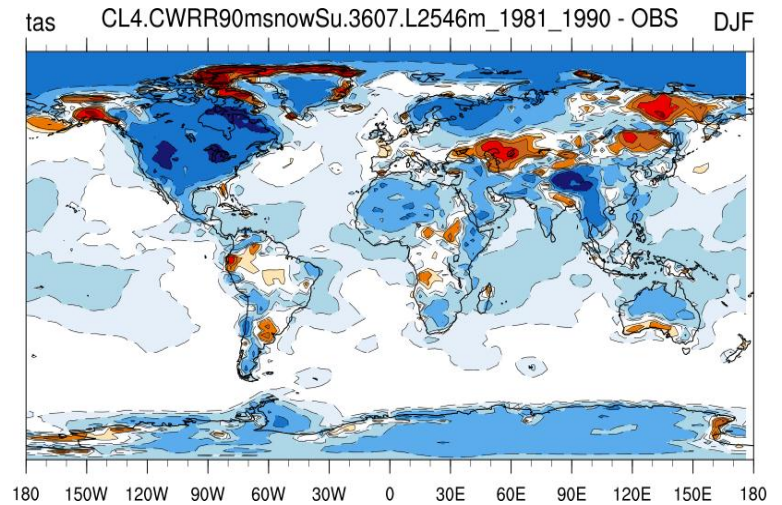
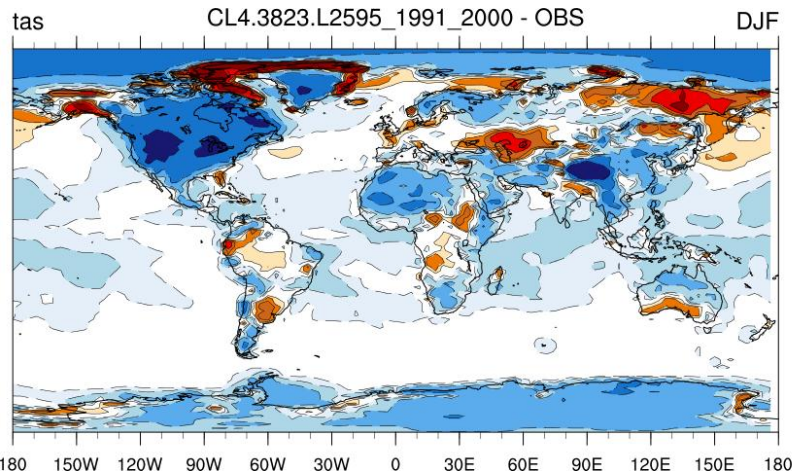
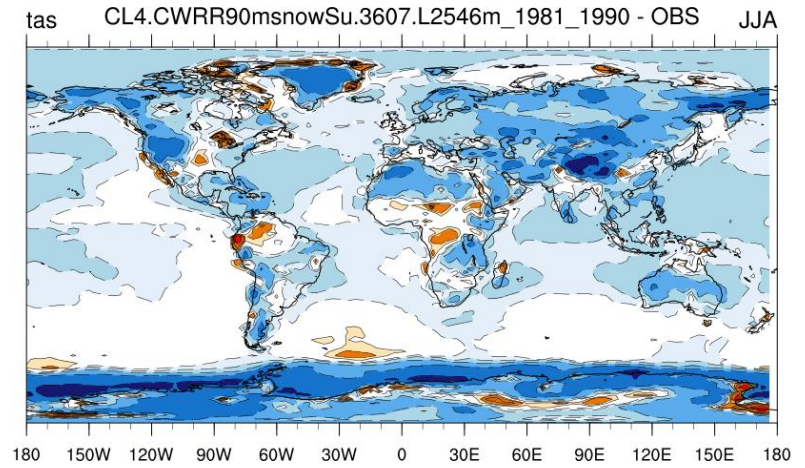
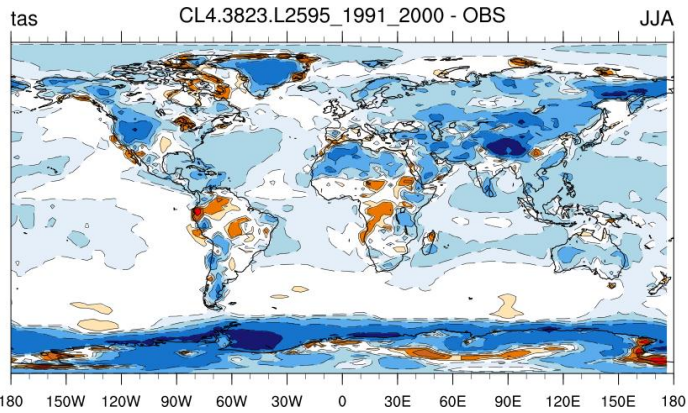


Sensibilité inertie thermique neige



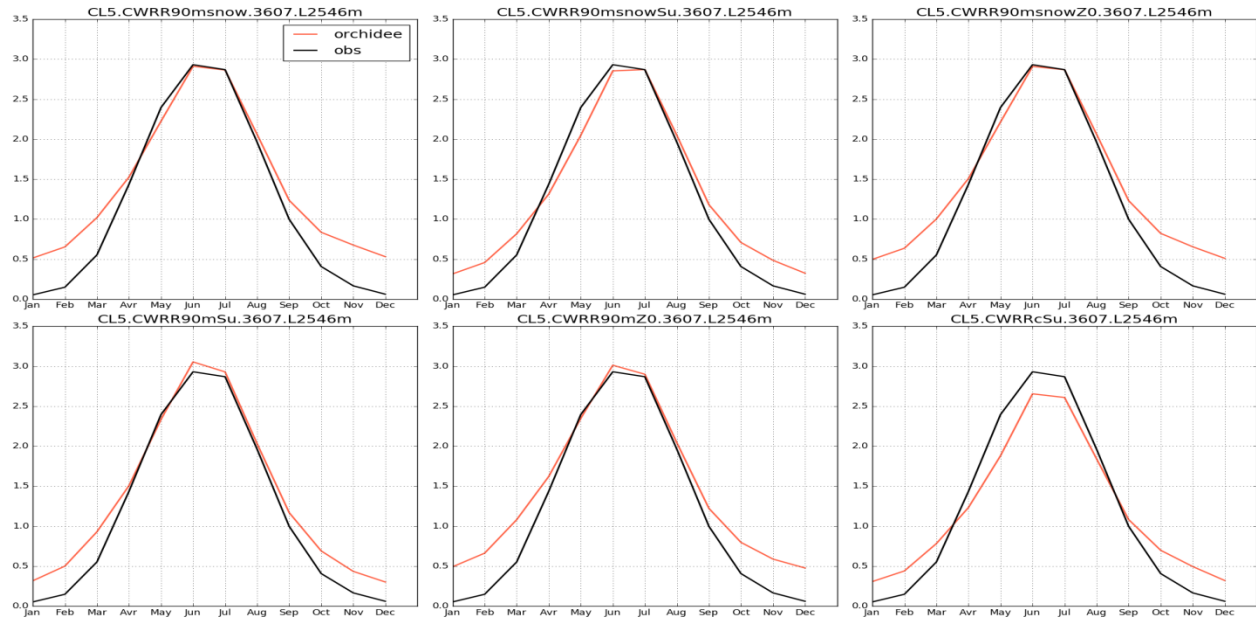
- Travaux en cours: Prise en compte du freinage par les collines ou les bosquets dans la couche limite et conversion de l'énergie du freinage en TKE dans le schéma de couche limite.
- Biais froid sur les calottes: Inertie thermique(350), nouvelles fonctions de stabilité pour la couche de surface, retour à un fort découplage ($l_{mixmin}=0.1$) + albedo vis et nir (0.96 et 0.68). Quid des Continents boréaux.

Nouvelles textures

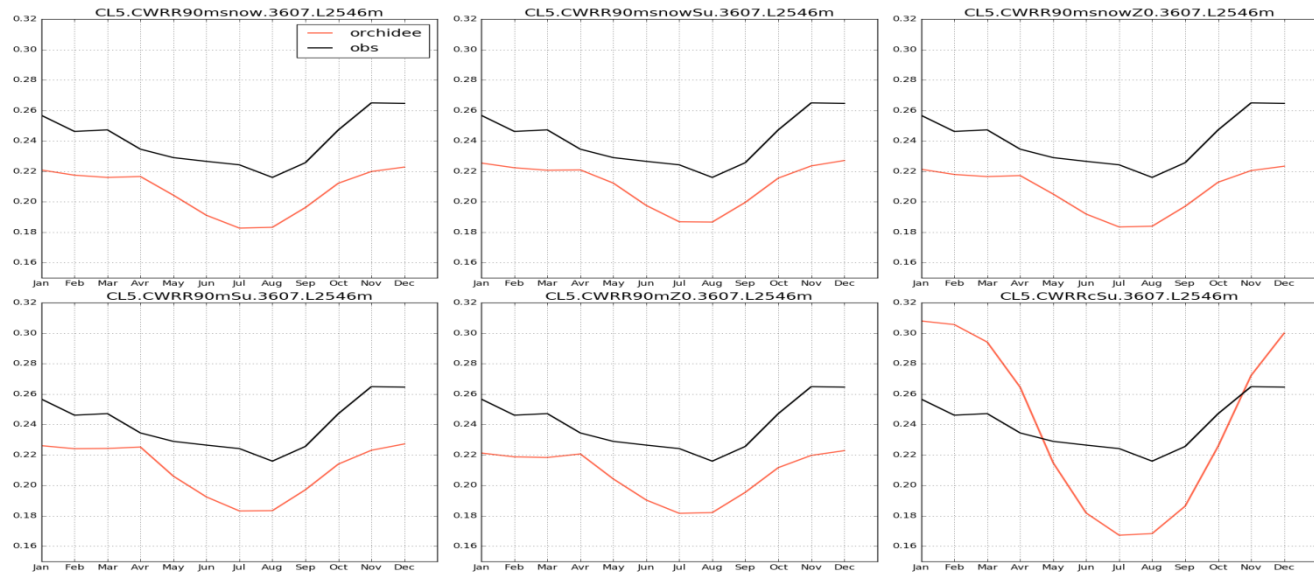


EUROPE

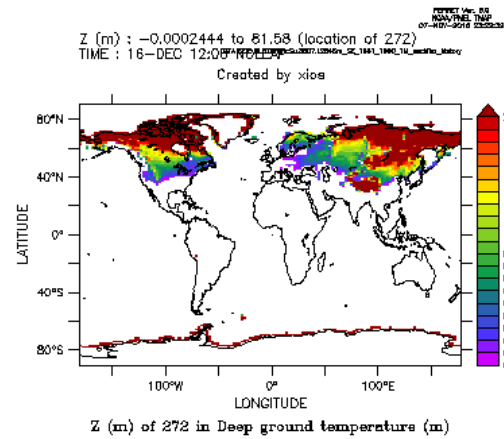
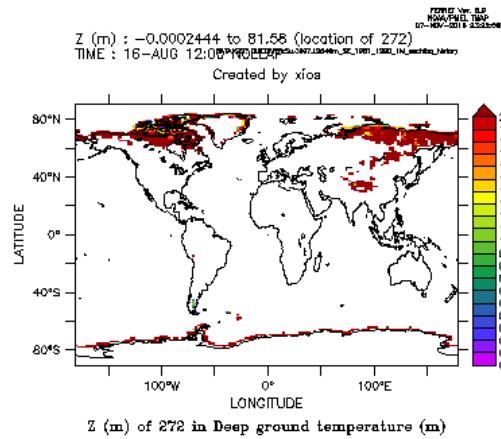
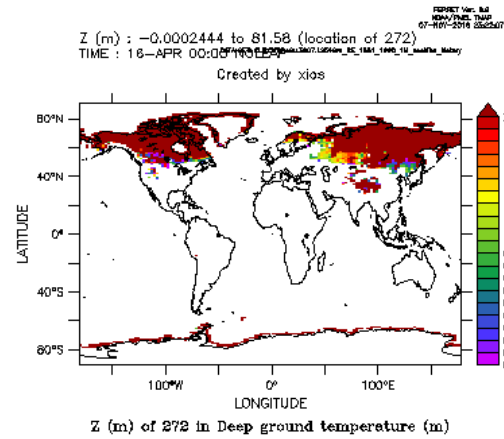
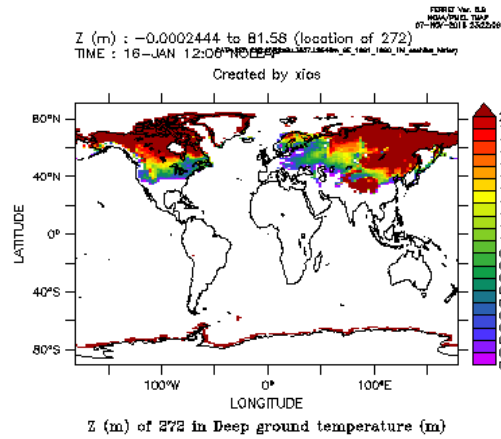
Seasonal cycle of evap [mm/day]



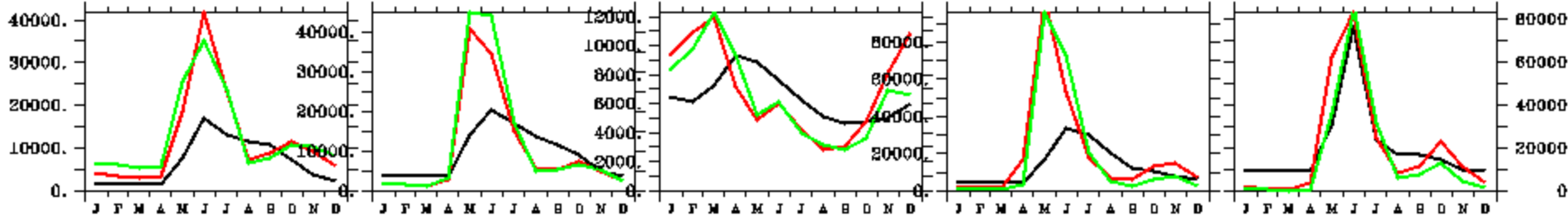
Seasonal cycle of mrsos [m3/m3]



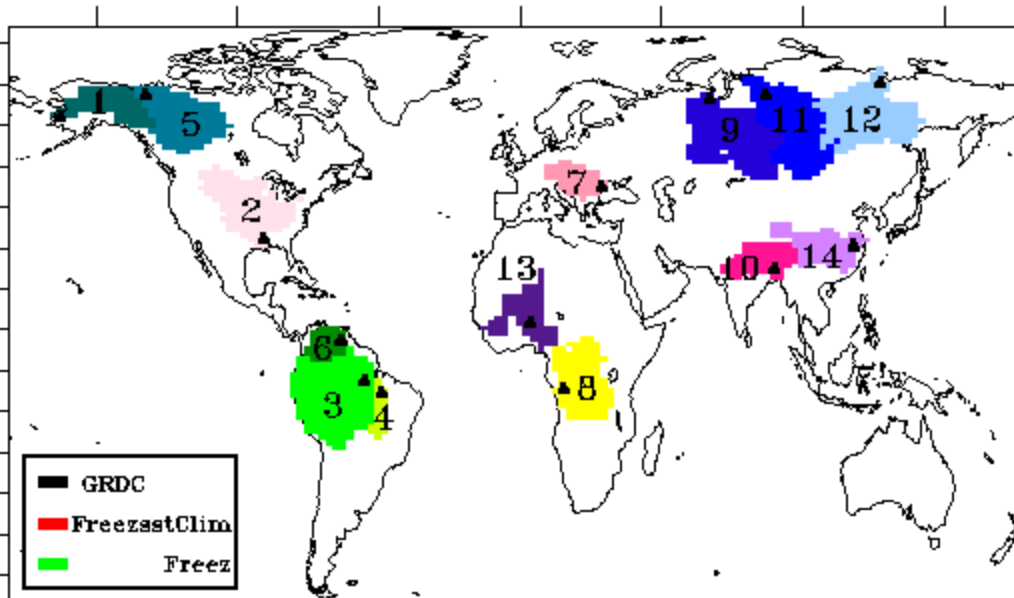
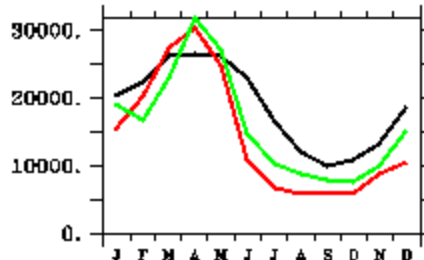
Profondeur de sol gelé



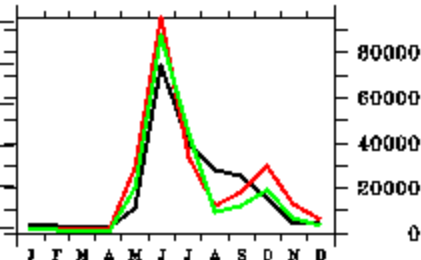
1: Yukon (Pilot sta.) 5: McKenzie (Arc. Red Riv.) 7: Danube (Cestal Izmail) 9: Ob (Salekhard) 11: Yenisei (Igarka)



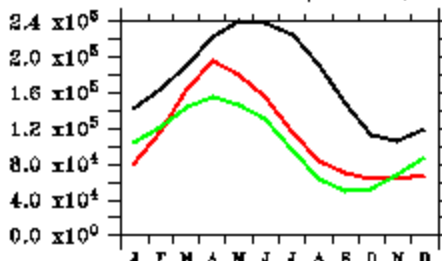
2: Mississippi (Vicksburg)



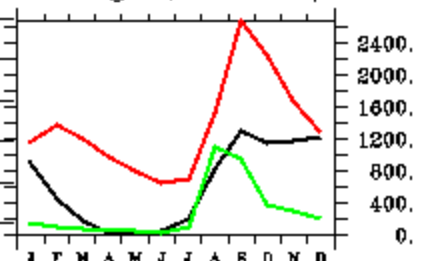
12: Lena (Kusur)



3: Amazon (Obidos)

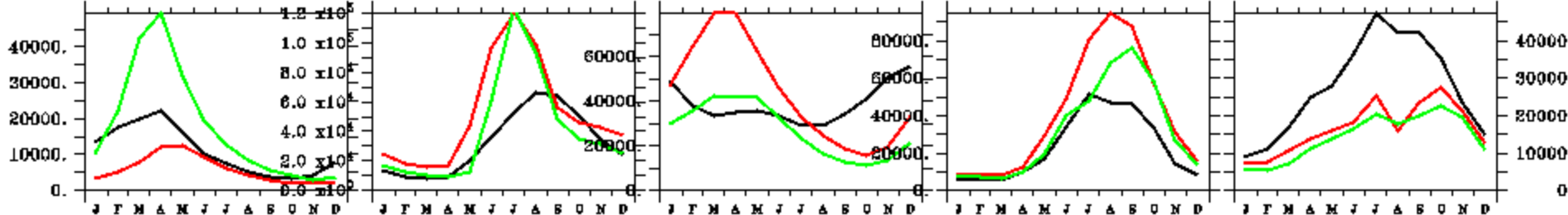


13: Niger (Malanville)



■ GRDC
■ FreezastClim
■ Freez

4: Tocantins (Itupiranga) 6: Orinico (Puente Angostura) 8: Congo (Kinshasa) 10: Brahmaputra (Bahadurabad) 14: Changjiang (Datong)



Encore du travail pour

- Biais froid en hiver
- Biais froid Sahara (texture pas/peu d impact ailleurs si un peu)
- Pluie reliefs?
- Evaporation?
- Neige et gel du sol

Biophysic

- Propriétés thermiques du sol (USDA texture classes)
 - Test Agnes : a priori OK ?
- Nouvelle neige
 - Correction de bug en cours (impact la conservation de l'eau et de l'énergie)
 - Epaisseur neige probablement trop faible mais conductivité thermique faible (neige peu dense) => Isolation du sol "correcte"
- Gel du sol et problème en Afrique
 - Tests proposés: Vérifier si le sol superficiel gèle la nuit (en cours); tester un cas avec des couches de sol plus épaisses en surface (à faire Vlad)

- Gel du sol et problème en Sibérie (ouest lac Baikal)
 - ➔ Problème: stress hydrique très fort en été (=> pas de GPP)
 - Test Agnès: Lissage de la fonction stress hydrique
 - Test Nicolas: passage stress hydrique sur la conductance
=> Amélioration sur sites dans cas « agnes + nicolas »
 - Test envisagé: diminuer la réduction de l'infiltration de l'eau en fonction de la profondeur de sol gelé et non pas de la présence de gel.. (aura un impact sur les zones sud-sibérienne)
- Albédo
 - Modifications albédo sol nu, neige et végétation
 - Voir <https://orchidas.lsce.ipsl.fr/dev/fit.php>
 - Problèmes restants: albédo neige encore trop faible
Saisonnalité dans hémisphère sud suspecte
Saisonnalité au sahel à améliorer
- Rugosité (Z0)
 - Formulation de Z_u (f (LAI)) proposé comme standard

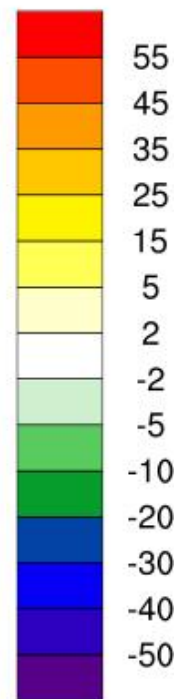
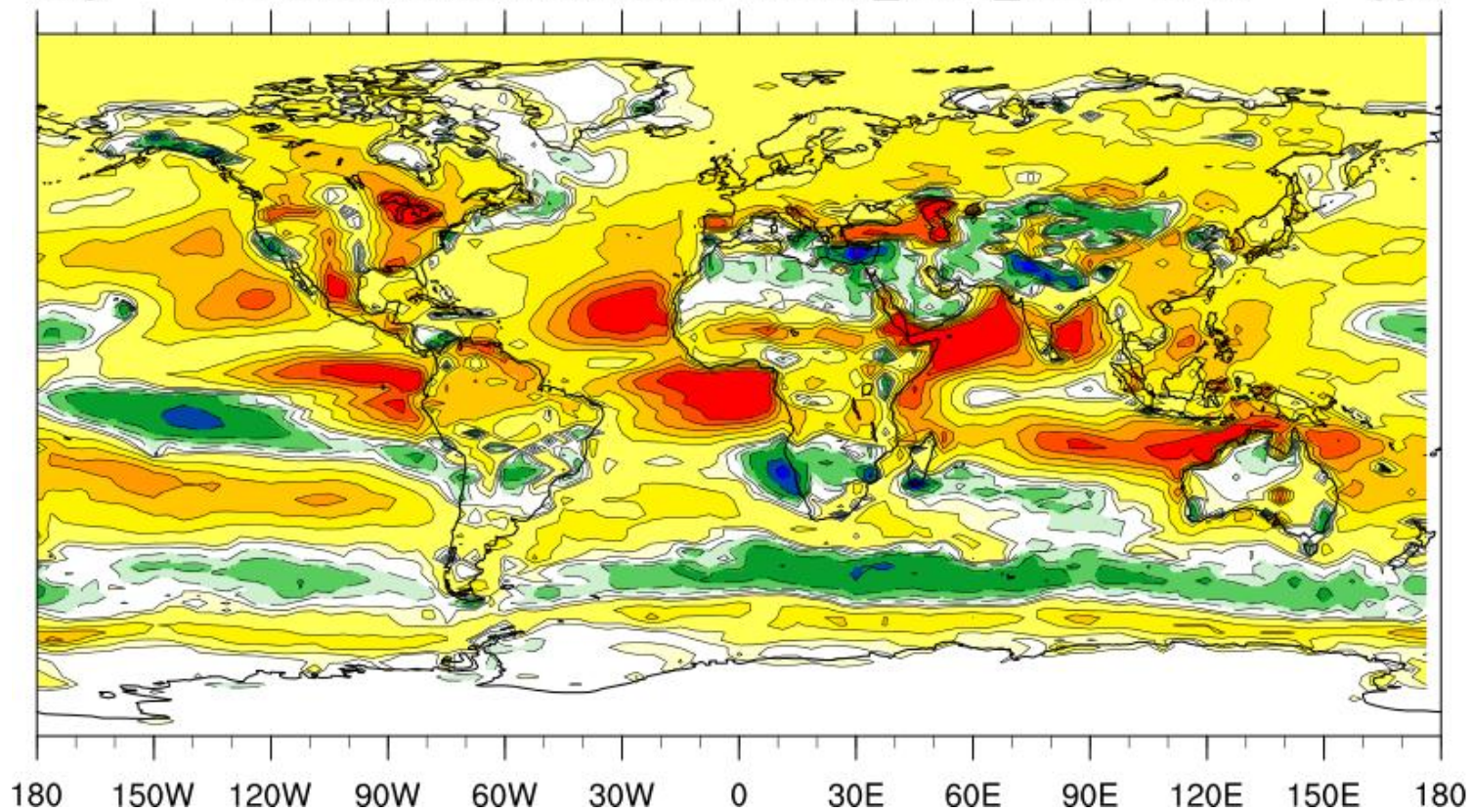
Biogeochemistry

- DGVM: Ok pour les hautes latitudes
- VOC: OK
- New land cover maps: Tests à réaliser
 - Carte vegetation actuelle prête
 - Reconstruction historique prête
- Overall “GPP/Resp” calibration : A réaliser
- Cycle Azote: en cours d’optimization

hfls

CL5.CWRR90mSu.3607.L2546m_1981_1990 - OBS

JJA



pr CL4.CWRR90msnow.3607.L2546m_1981_1990 - OBS YEAR

