

Comparaison des désagrégations statistique et dynamique

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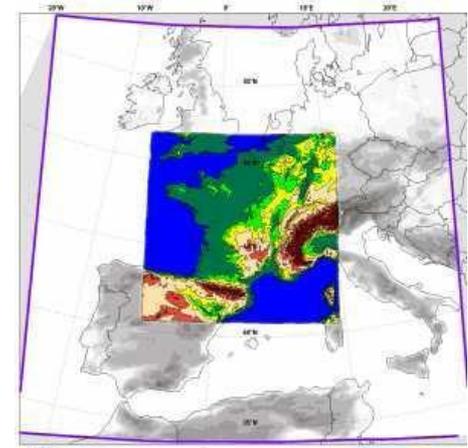
Plan

1. Présentation des méthodes
 1. Désagrégation statistique
 2. Désagrégation dynamique
2. Validation des méthodes
 - Temps présent (1961–1990)
 - Alpes, Pyrénées, Corse
 - Réanalyses SAFRAN
3. Dans le futur...
 1. Deux périodes : 2021–2050, 2071–2100
 2. CMIP3, scénario A1B
4. Perspectives

Présentation des méthodes

▶ Désagrégation dynamique : ALADIN–Climat

- CNRM
- Modèle à aire limitée
- 12 km
- Forçage aux frontières
 - ERA40
 - ARPEGE à 50km sur la France
- Correction quantile–quantile



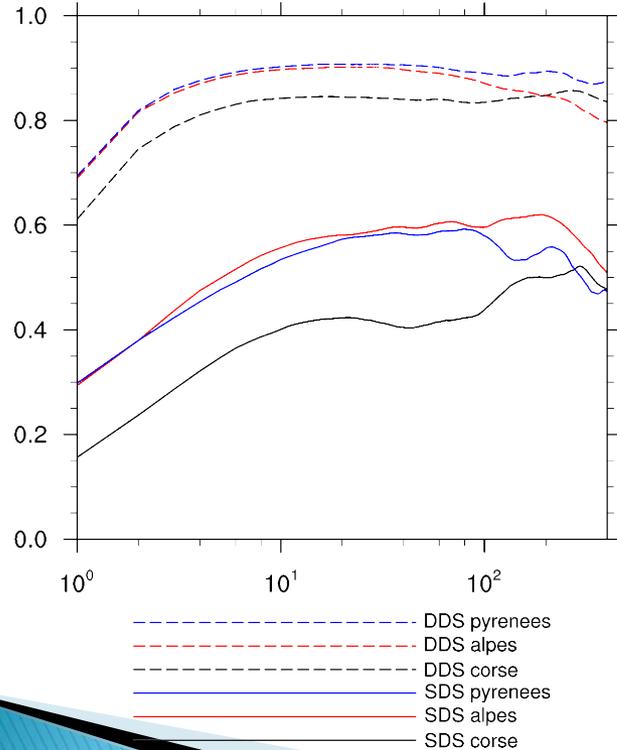
▶ Désagrégation statistique : DSCLIM

- 10 types de temps (TT) en DJF
- Lien statistique entre la circulation de grande échelle avec la précipitation sur la France à 8km (grille SAFRAN)

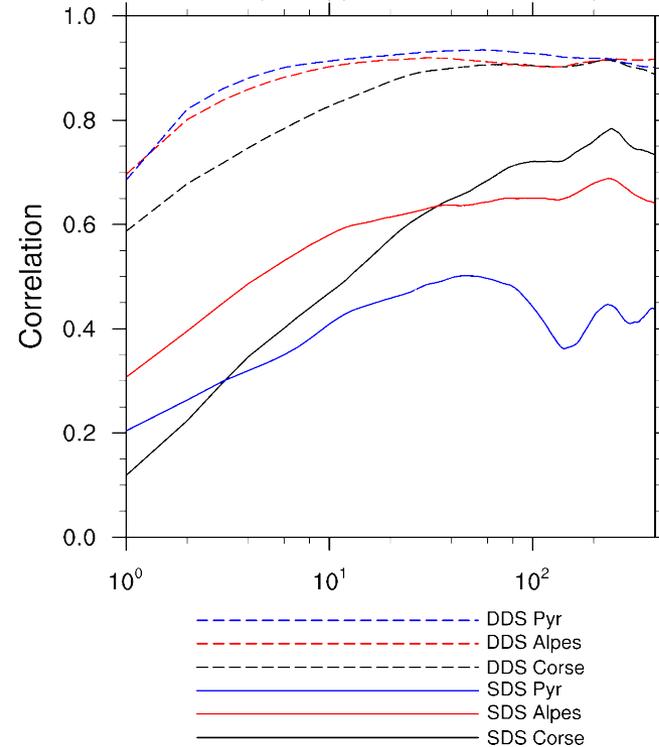
Validation des méthodes (1)

1. Désagrégations d'ERA40
2. Hiver étendu (NDJFM)

Correlation en fonction du pas de temps d'integration
SDS et DDS d'ERA40 par rapport a SAFRAN, Precip Totale (NDJFM)



Correlation en fonction du pas de temps d'integration
SDS et DDS d'ERA40 par rapport a SAFRAN, Precip Solide (NDJFM)

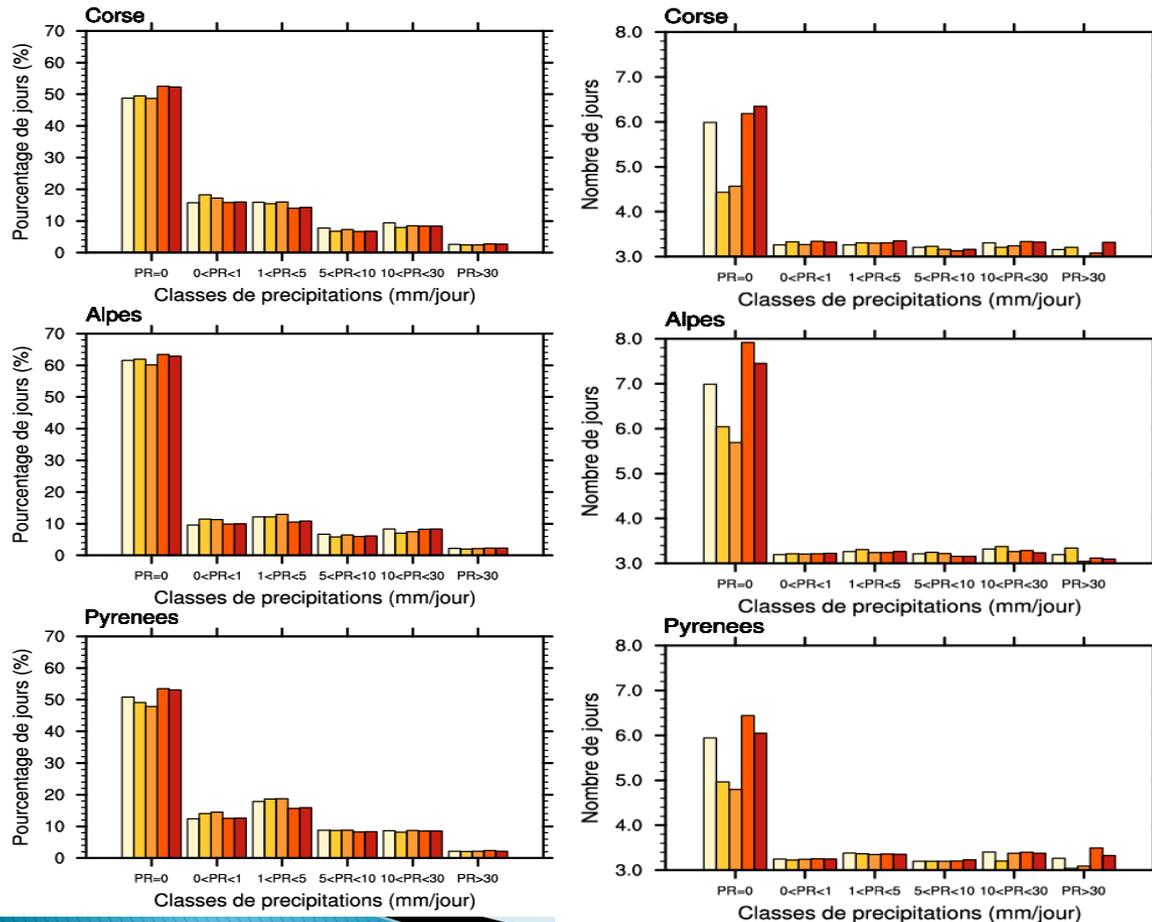


Validation des méthodes (2)

1. Catégories de précipitation totale par massif (NDJFM)

→ Répartition & persistance

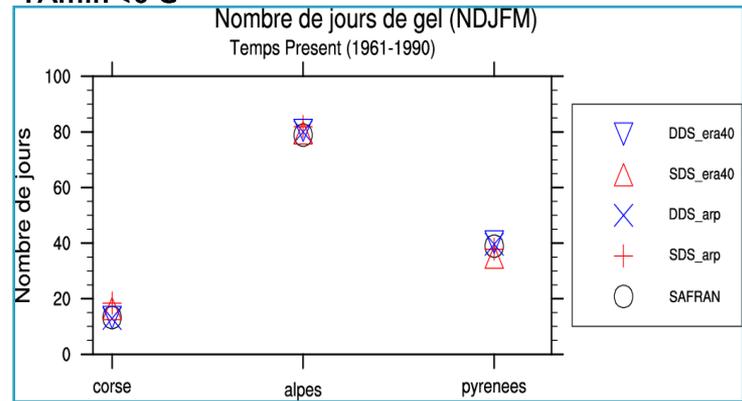
Repartition des precipitations par categories Persistence des precipitations par categories
Temps Present (1961-1990)



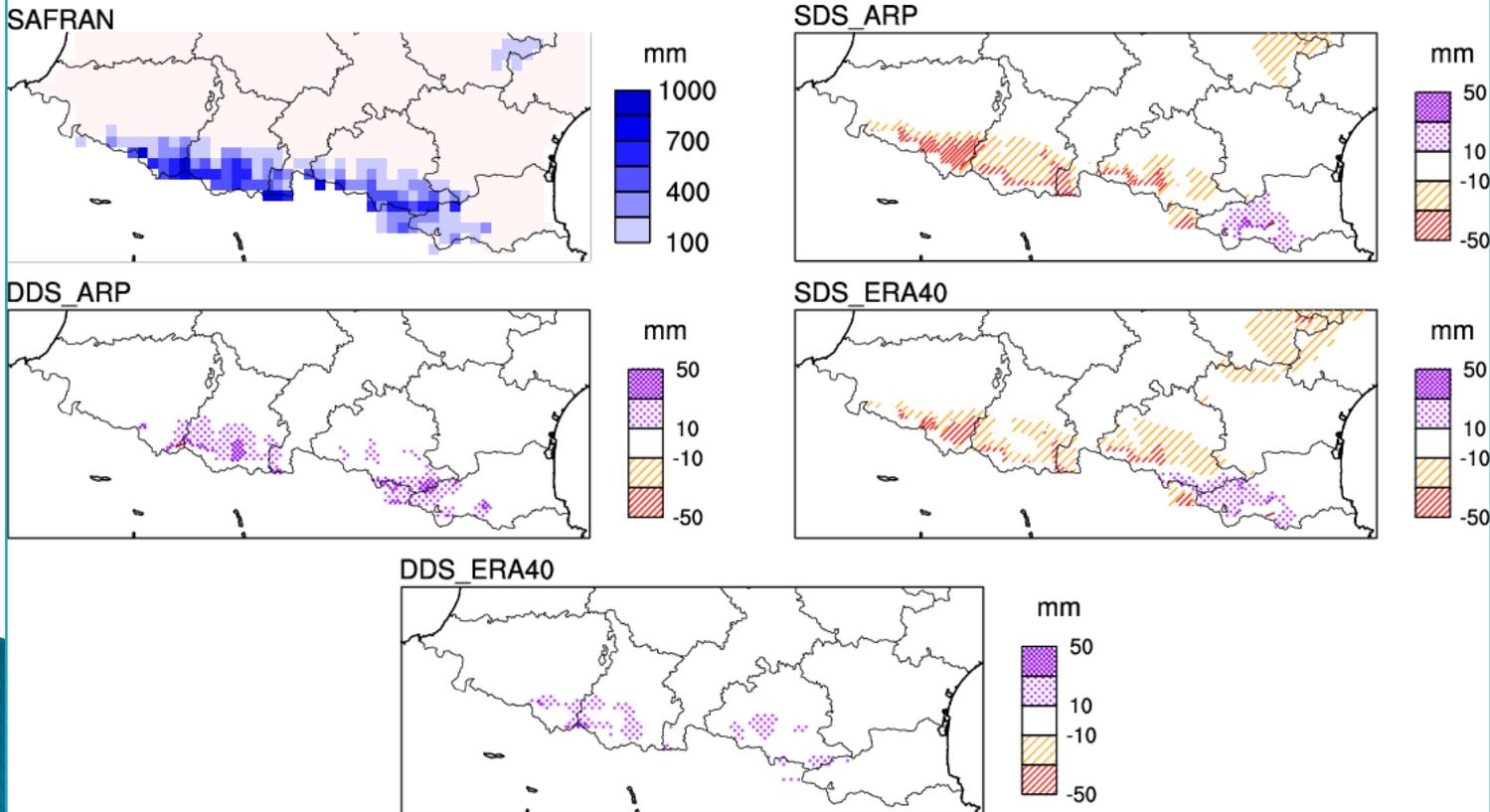
Épisodes de sècheresse :
→ SDS sous-estime
→ DDS surestime

Validation des méthodes (3)

T_{Amin} < 0°C



Cumul des precipitations solides
Temps present (1961-1990), pyrenees (NDJFM)

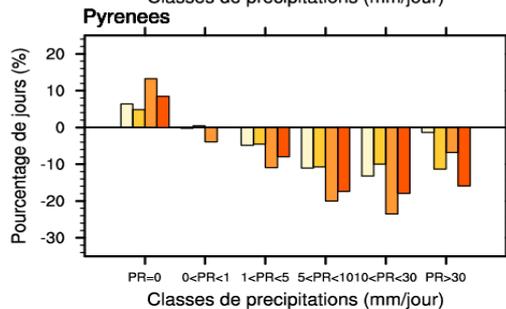
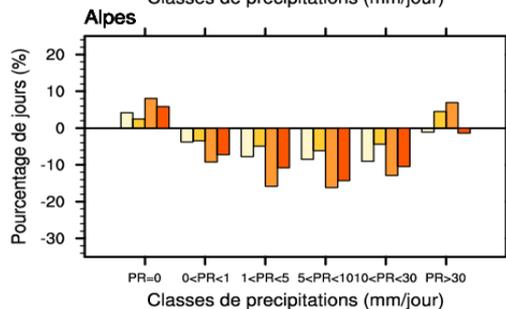
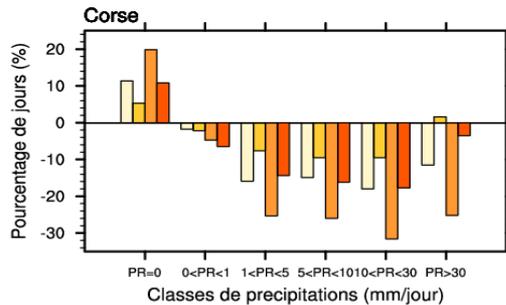


Scenario A1B (1)

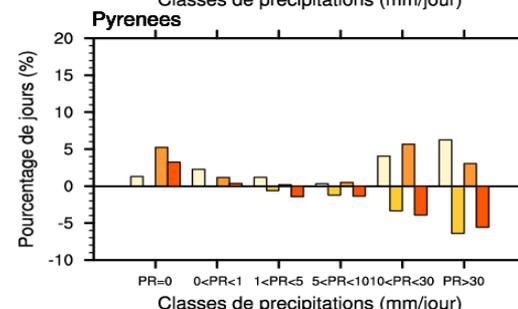
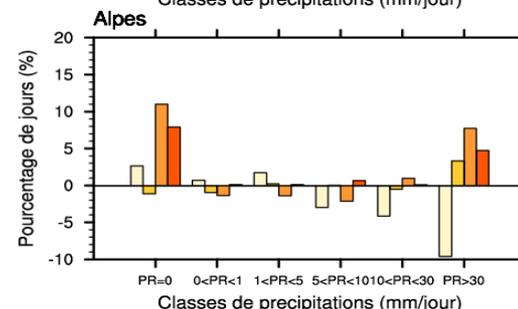
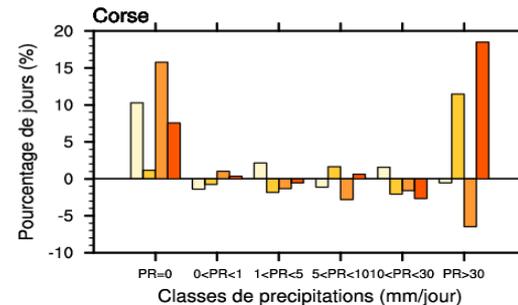
1. Anomalie relative par rapport à ARPEGE climat présent
2. 2 périodes

Repartition des precipitations par categories

Scenario Arpege A1B, Milieu de siecle (2021-2050) et Fin de siecle (2071-2100)



Persistence des precipitations par categories



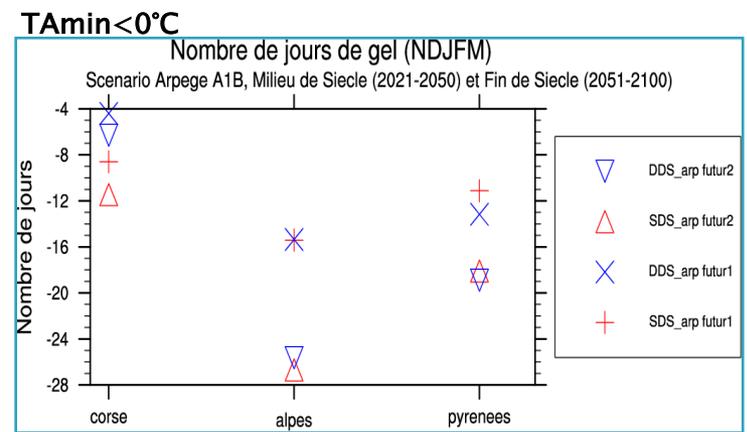
SDS 2021-2050

DDS 2021-2050

SDS 2071-2100

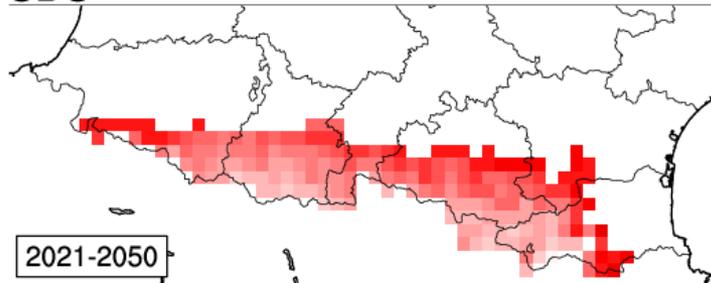
DDS 2071-2100

Scenario A1B (2)

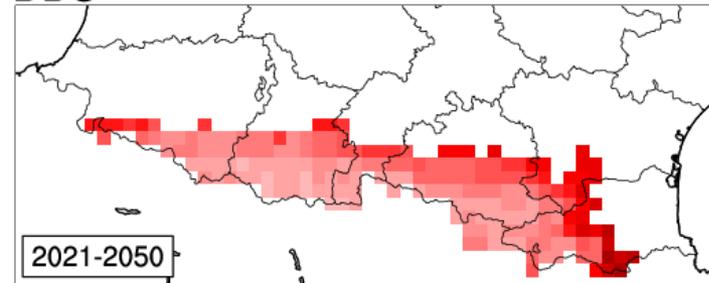


Cumul des precipitations solides, pyrenees (Masque à 500 m)
 Simulations ARPEGE, scenario A1B (NDJFM)

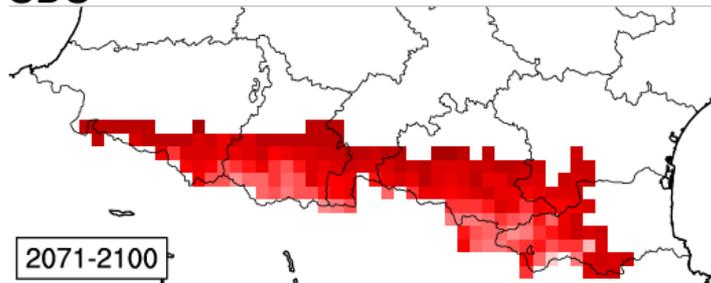
SDS



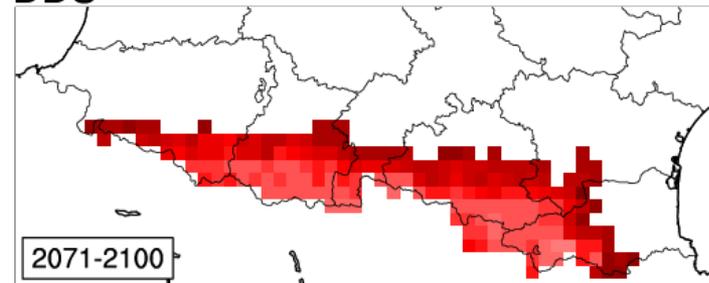
DDS



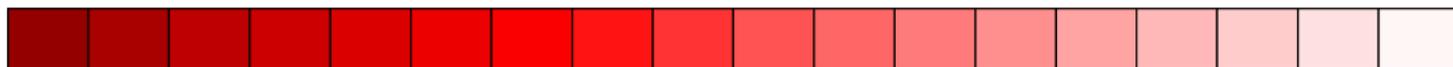
SDS



DDS



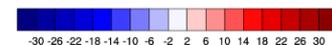
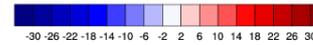
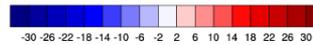
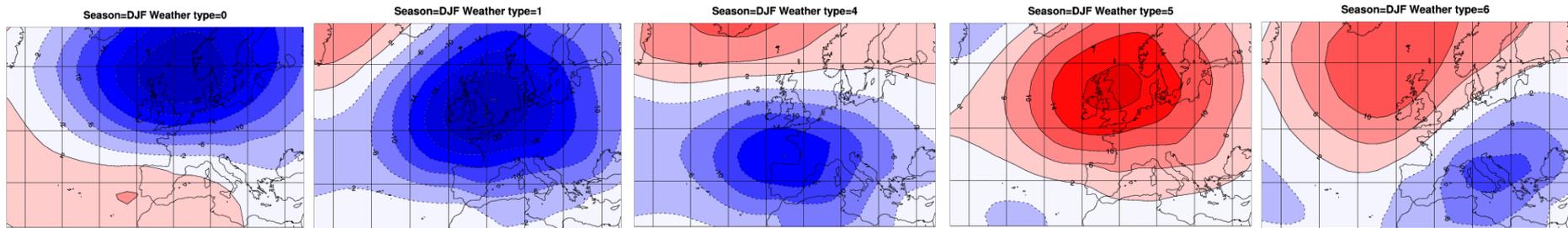
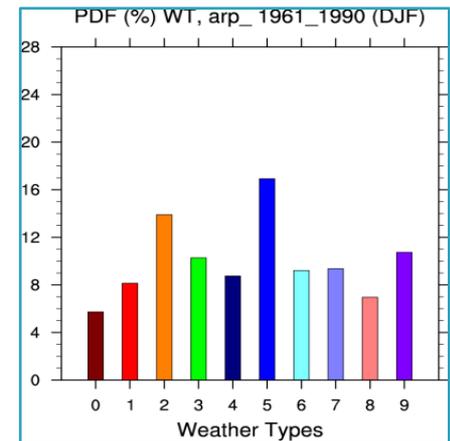
Anomalie par rapport a la periode 1961-1990 (%)



-90 -80 -70 -60 -50 -40 -30 -20 -10 -0

Types de temps et précipitation

- ▶ Corrélation entre fréquence d'occurrence d'un type de temps et précip totale → 5 TT dominants pour les régions montagneuses (DJF)



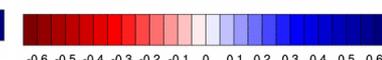
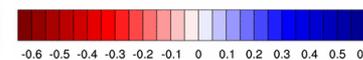
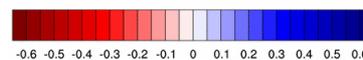
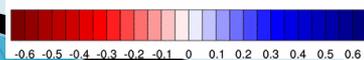
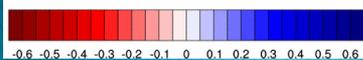
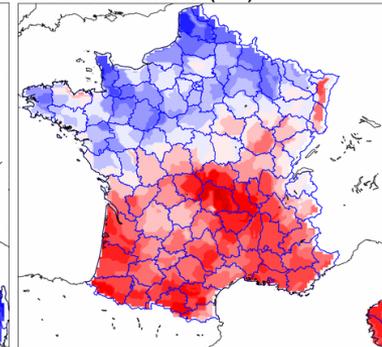
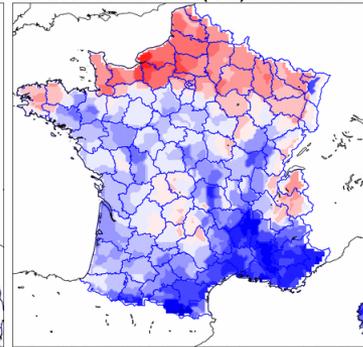
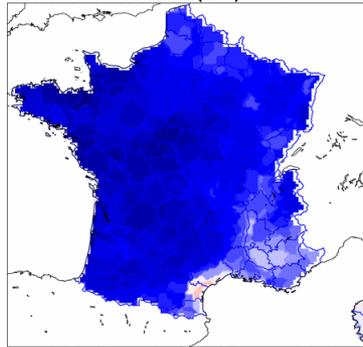
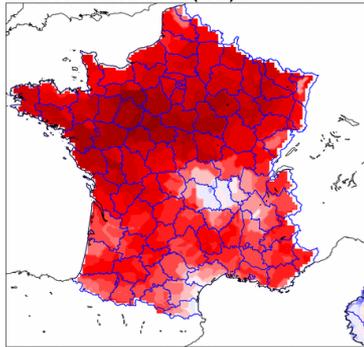
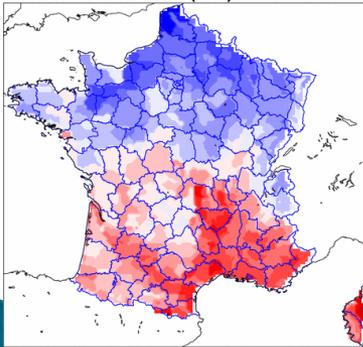
Corrélation entre PRTOT et la fréquence d'occurrence de wt0 (DJF)

Corrélation entre PRTOT et la fréquence d'occurrence de wt1 (DJF)

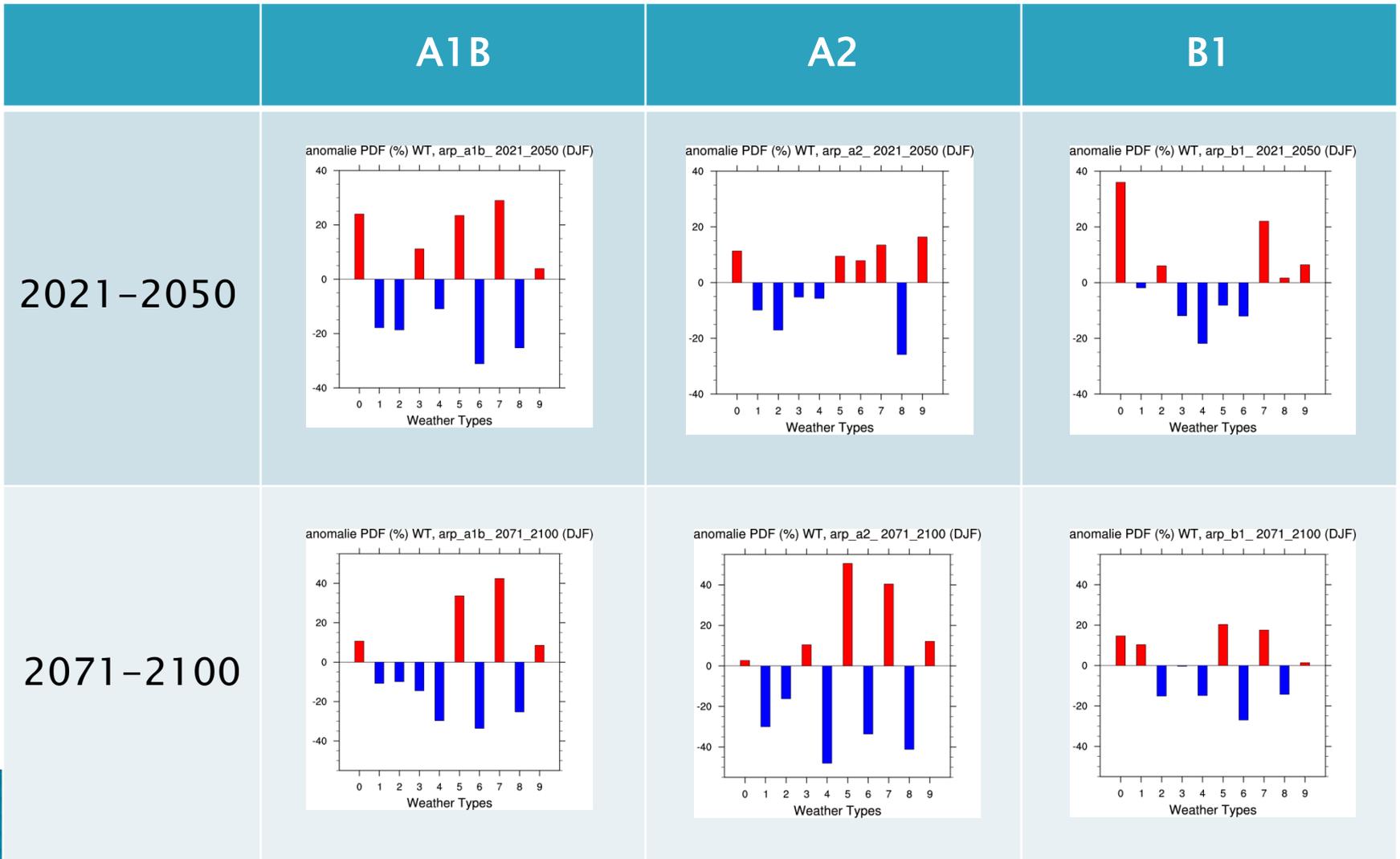
Corrélation entre PRTOT et la fréquence d'occurrence de wt4 (DJF)

Corrélation entre PRTOT et la fréquence d'occurrence de wt5 (DJF)

Corrélation entre PRTOT et la fréquence d'occurrence de wt6 (DJF)

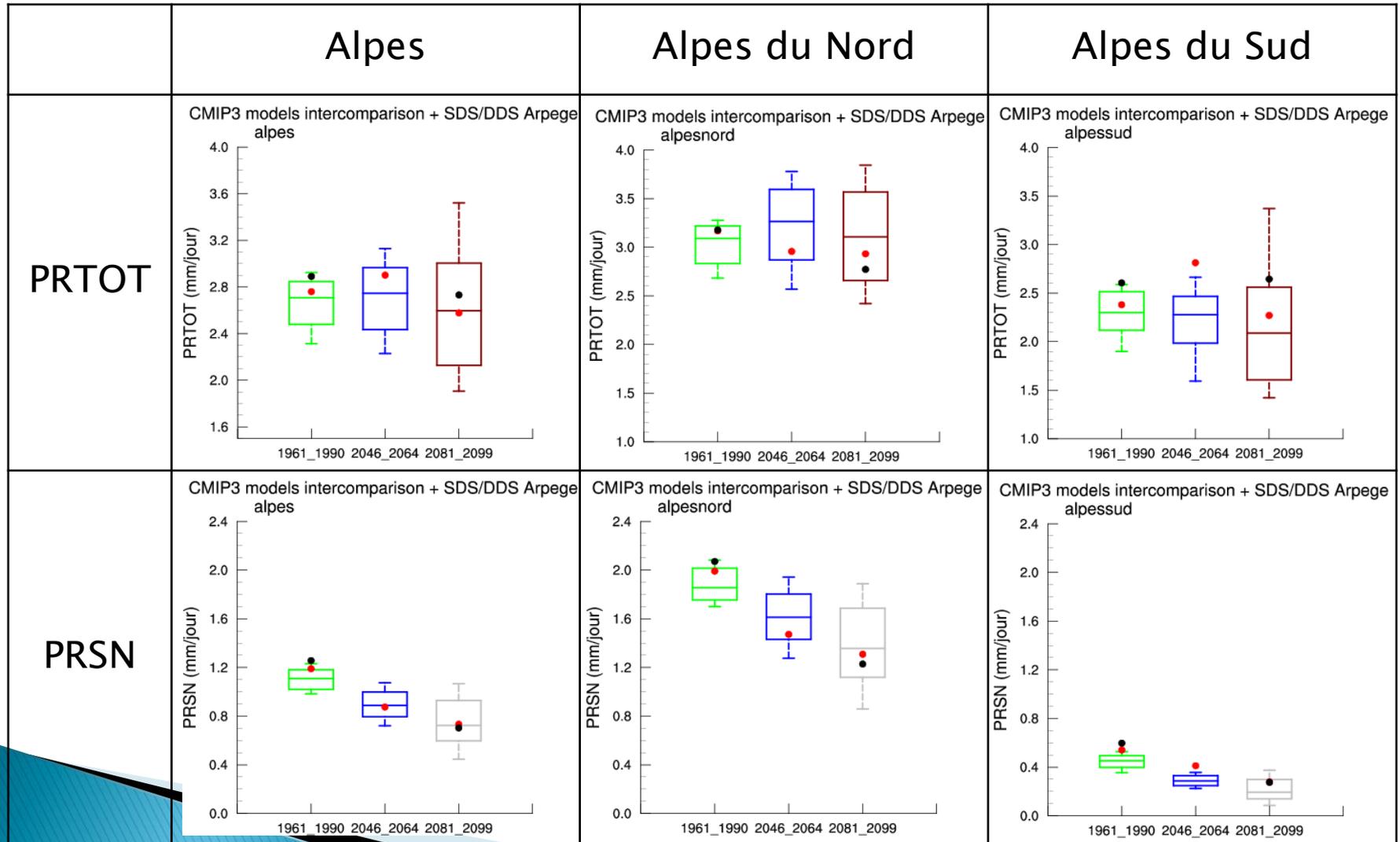


Types de temps et scénarios



Comparaison avec CMIP3

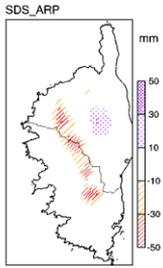
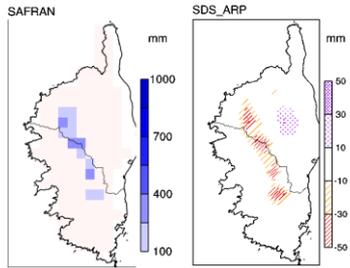
- DDS
- SDS



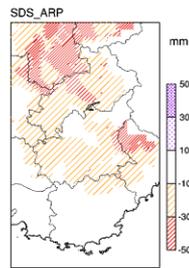
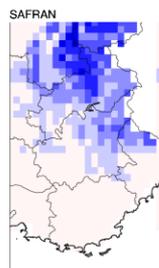
Perspectives

- ▶ Subdivisions spatiales
 - ▶ Etude des rétroactions
 - ▶ Evaluation des incertitudes
- 

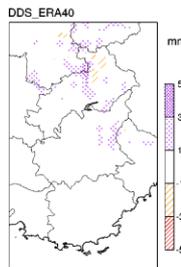
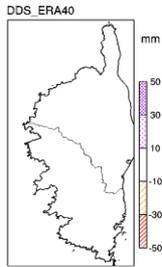
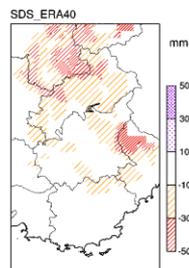
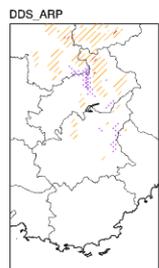
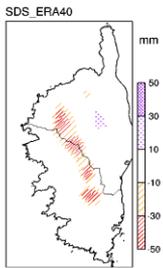
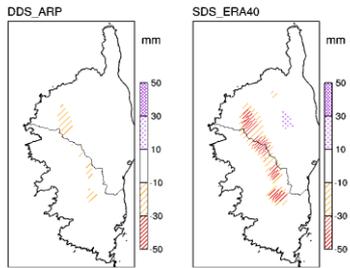
Cumul des précipitations solides
Temps présent (1961-1990), corse (NDJFM)



Cumul des précipitations solides
Temps présent (1961-1990), alpes (NDJFM)

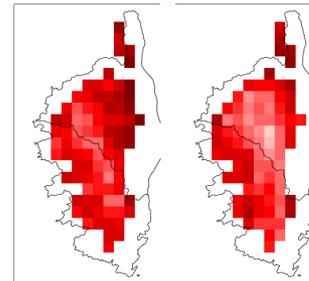


Scénario A1B

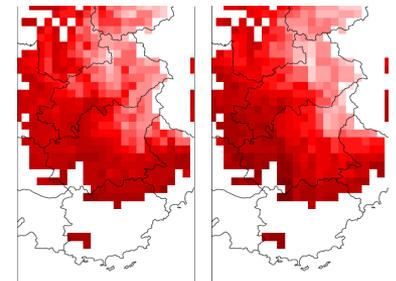
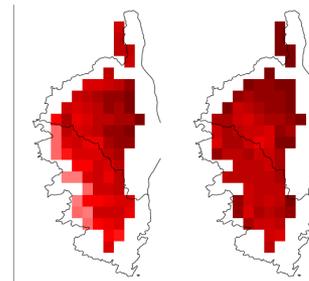
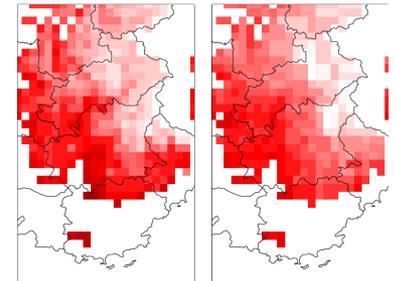


Présent

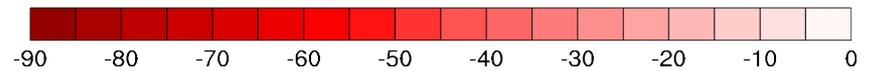
Cumul des précipitations solides, corse
Simulations ARPEGE, scénario A1B (NDJFM)



Cumul des précipitations solides, alpes
Simulations ARPEGE, scénario A1B (NDJFM)



Anomalie par rapport a la periode 1961-1990 (%)



CMIP3 : Pyrénées et Corse

- DDS
- SDS

