

Echam frequency of cold nights

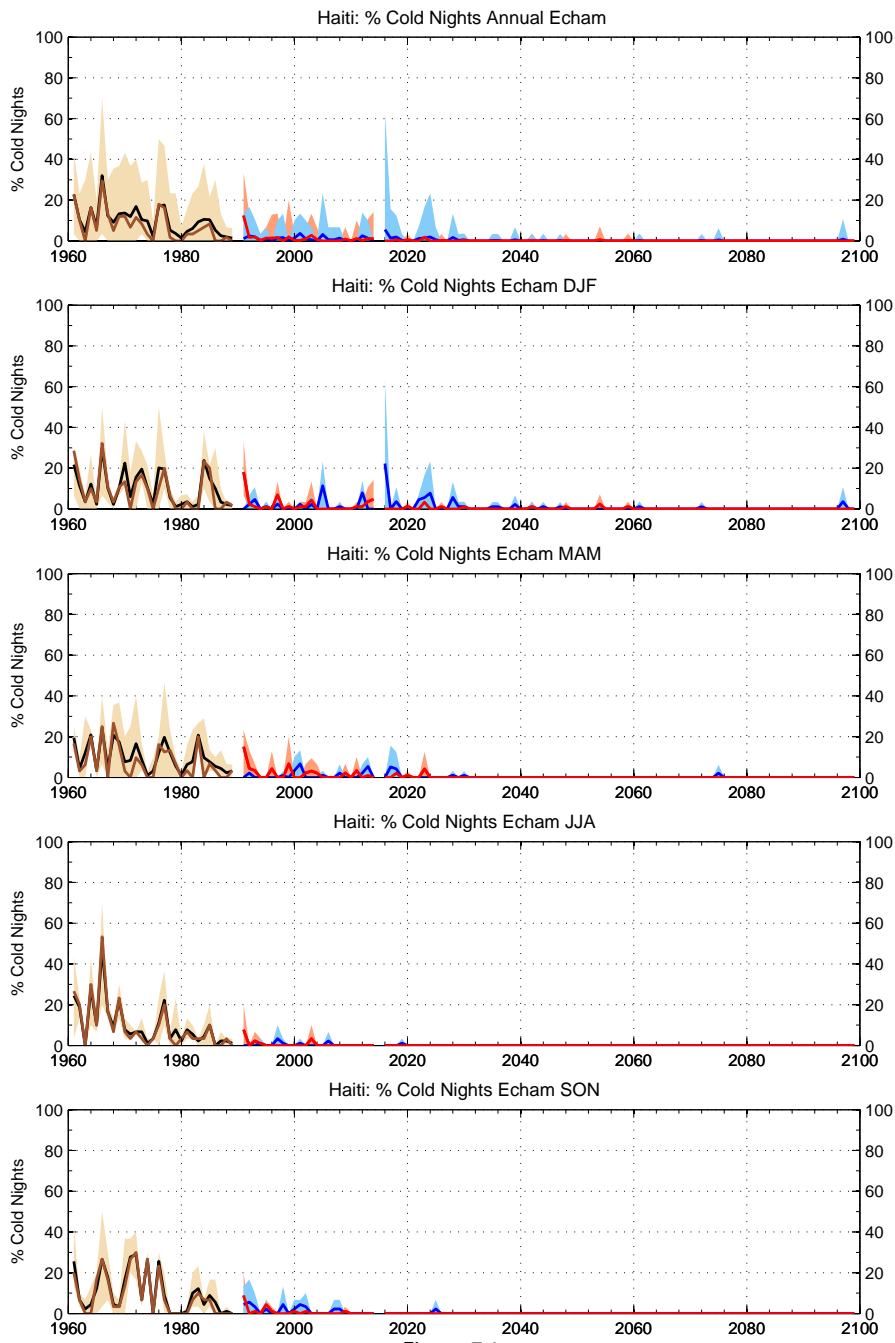


Figure 7.1

Echam A2 freq of cold nights

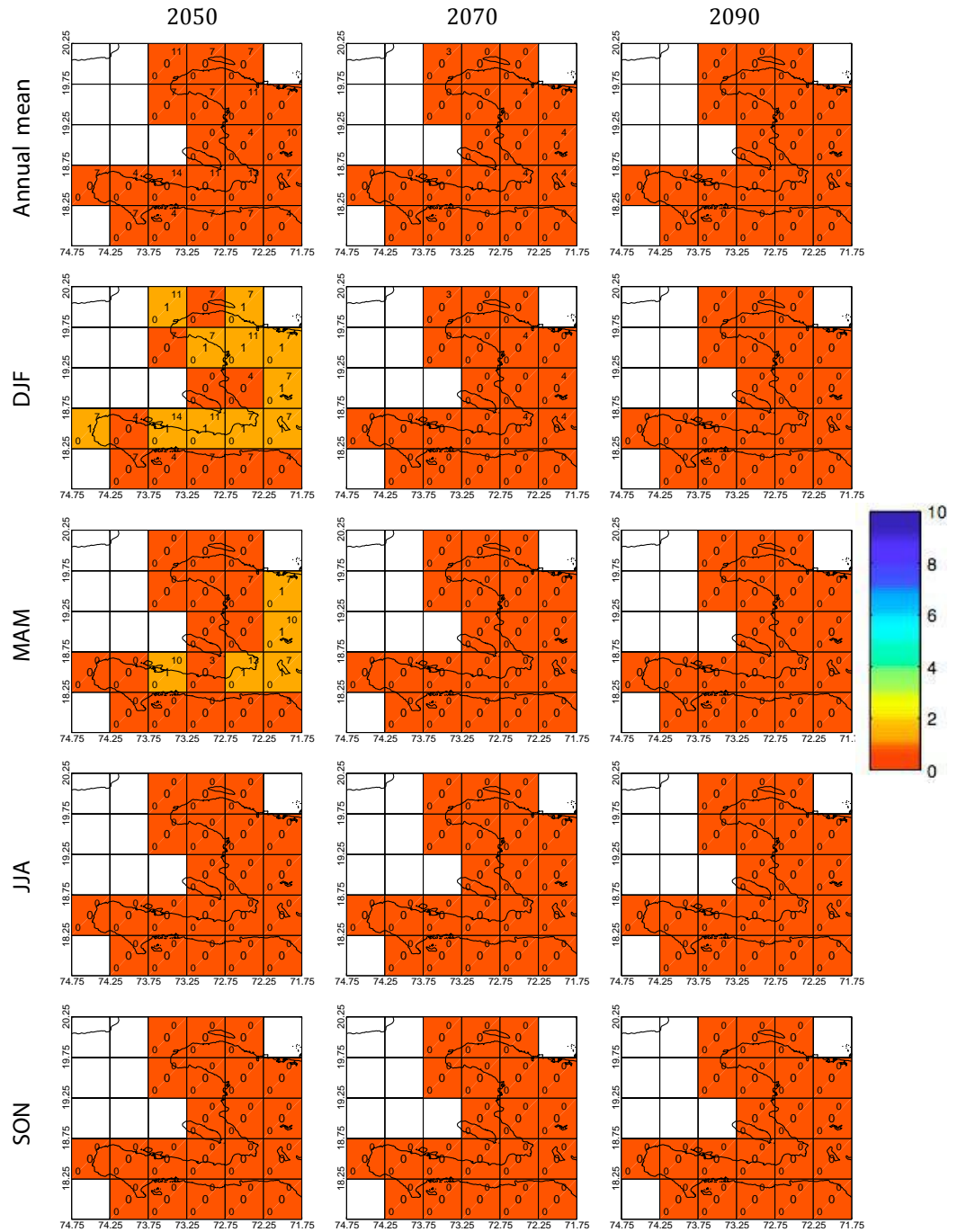


Figure 7.2

ANNEXE II

Echam B2 freq cold nights

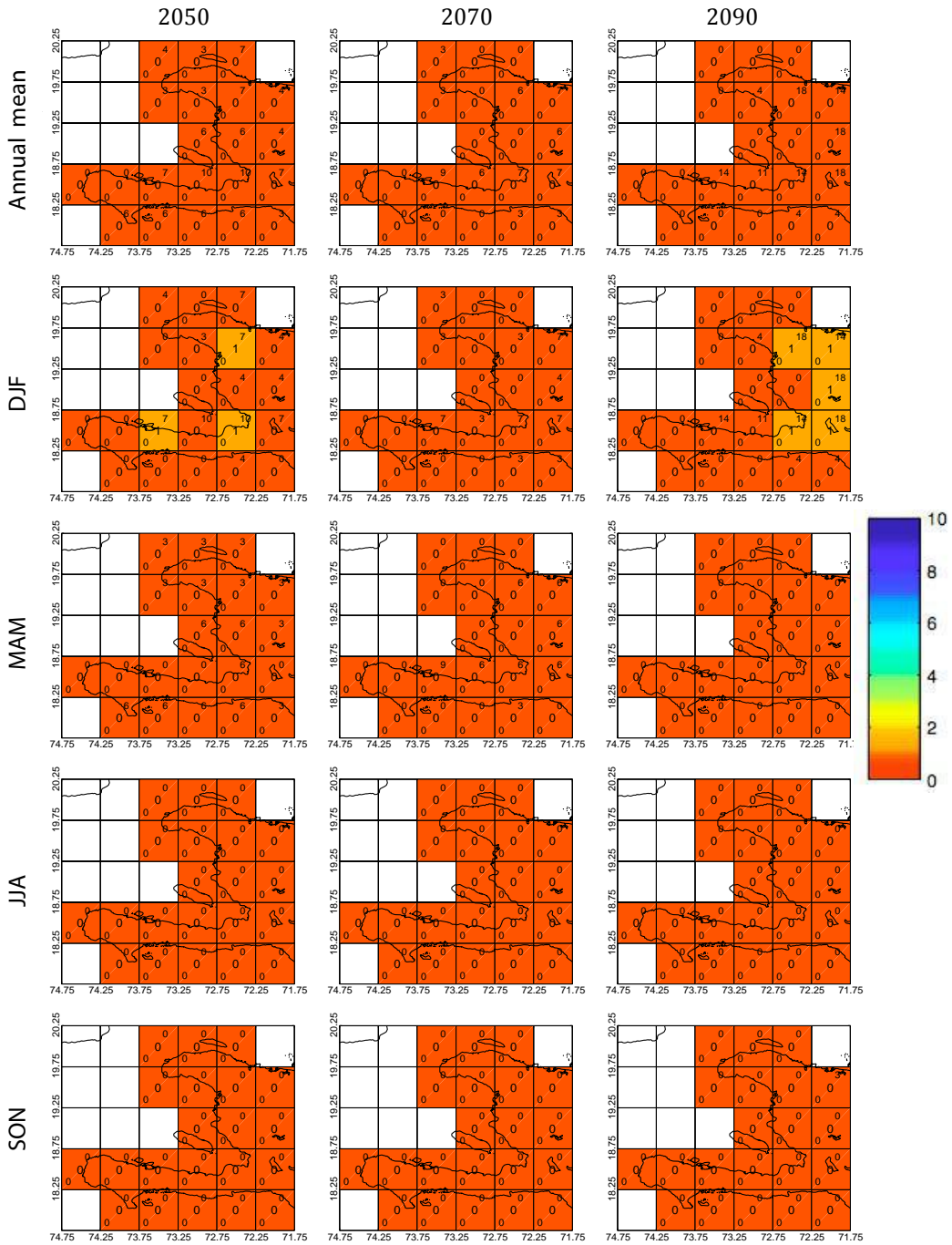


Figure 7.3

Echam Rain Heavy Events

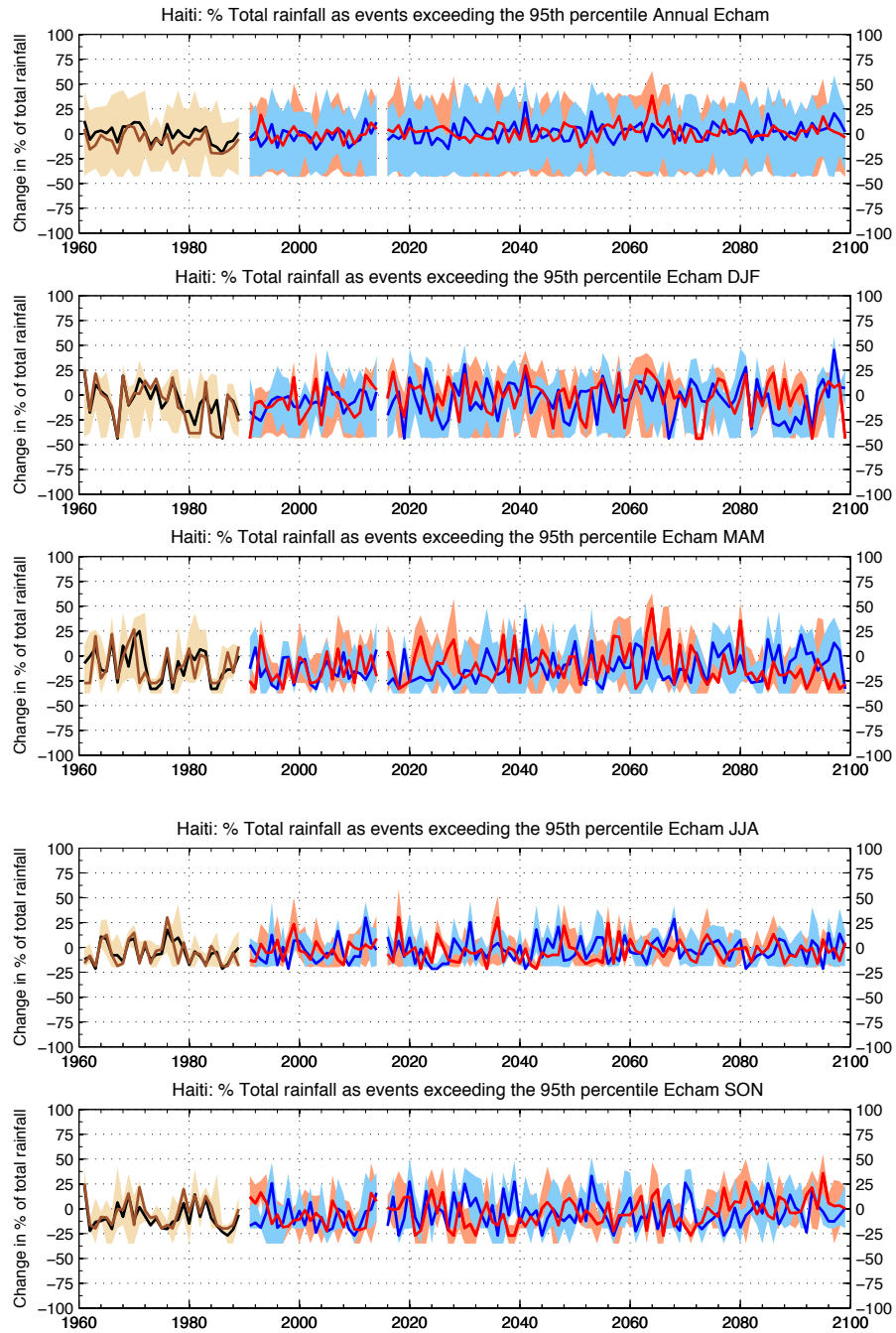


Figure 8.1

ANNEXE II

Echam A2 Heavy rain events

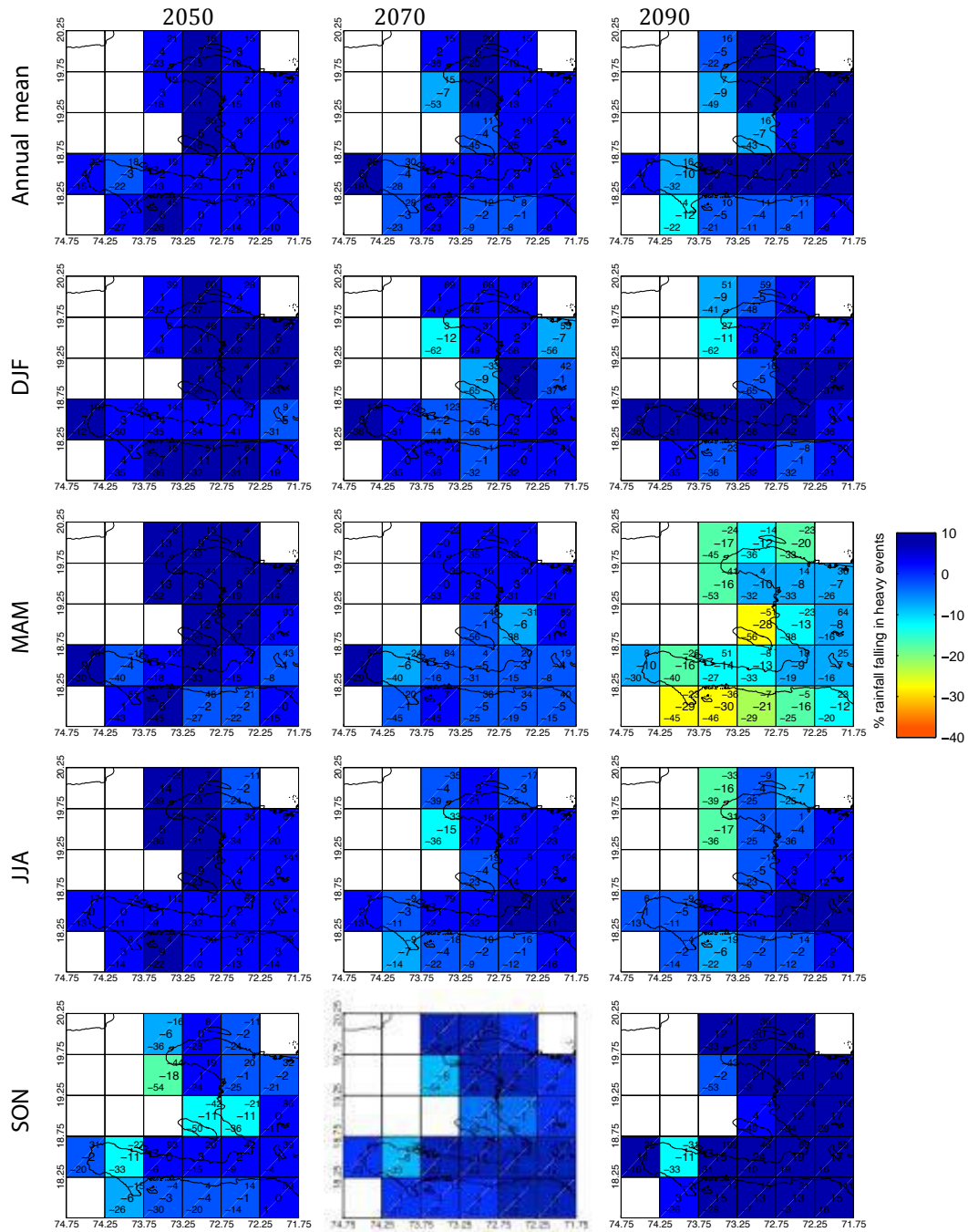


Figure 8.2

Echam B2 Heavy rain events

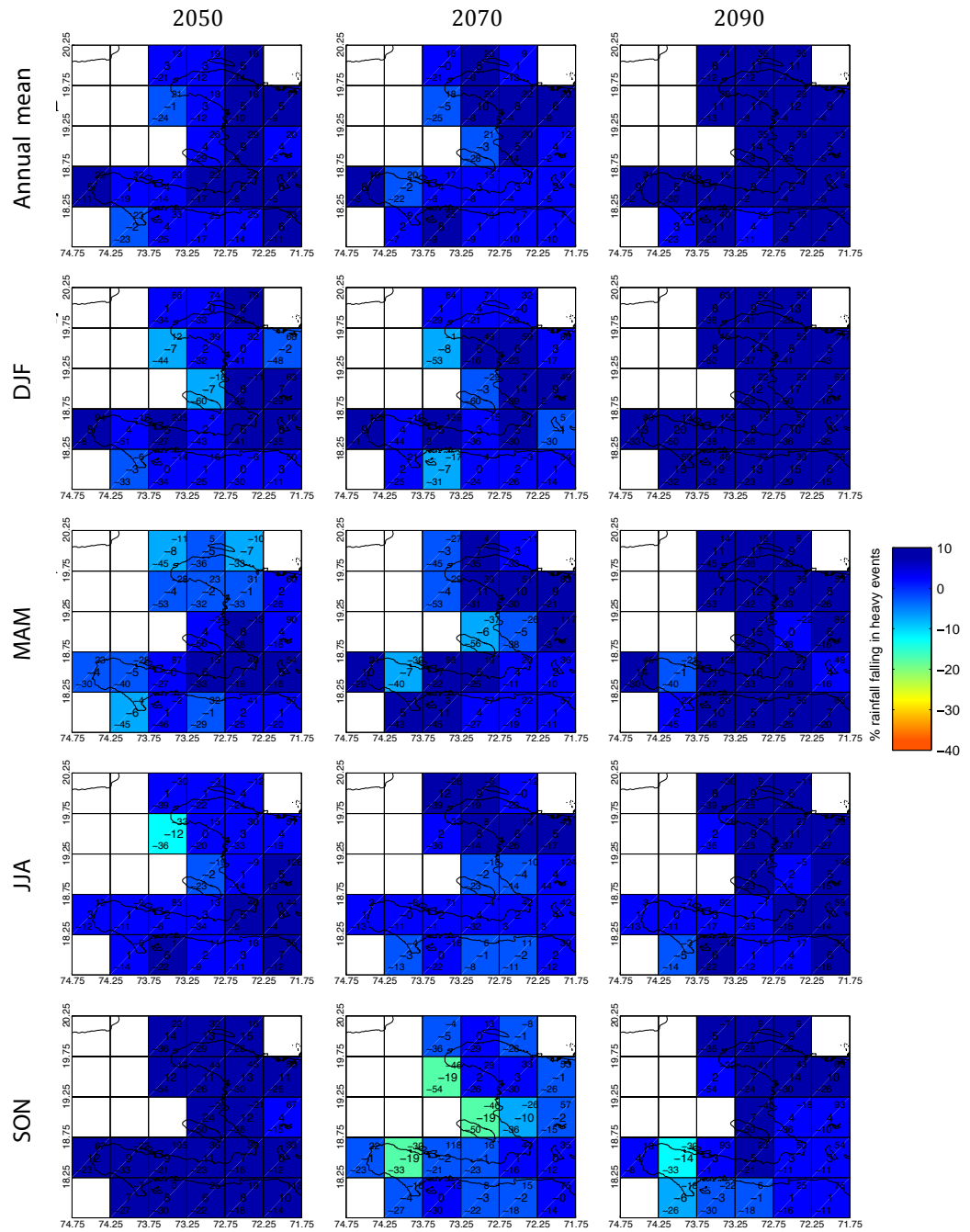


Figure 8.3

Echam Rain 1day

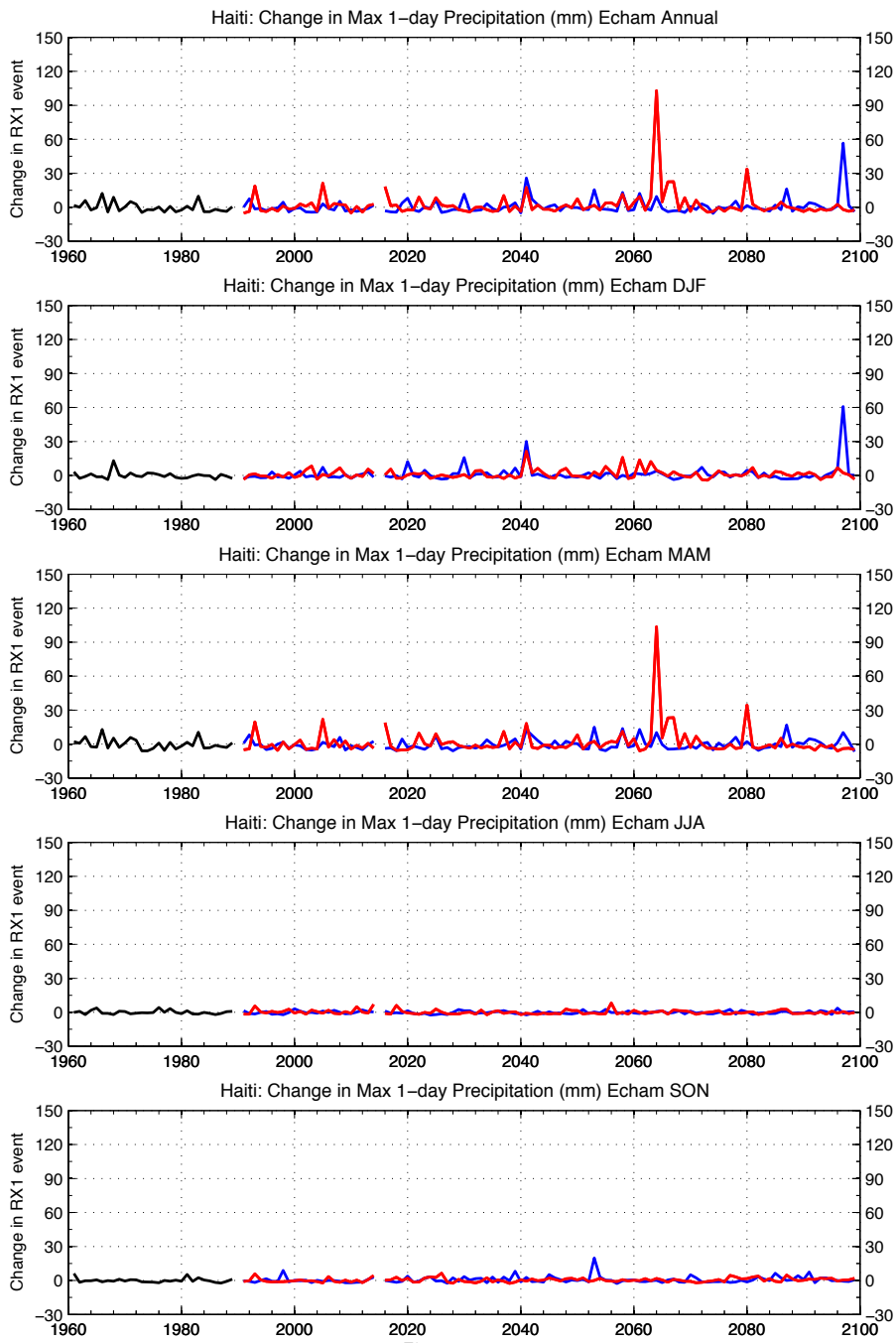


Figure 9.1

ANNEXE II

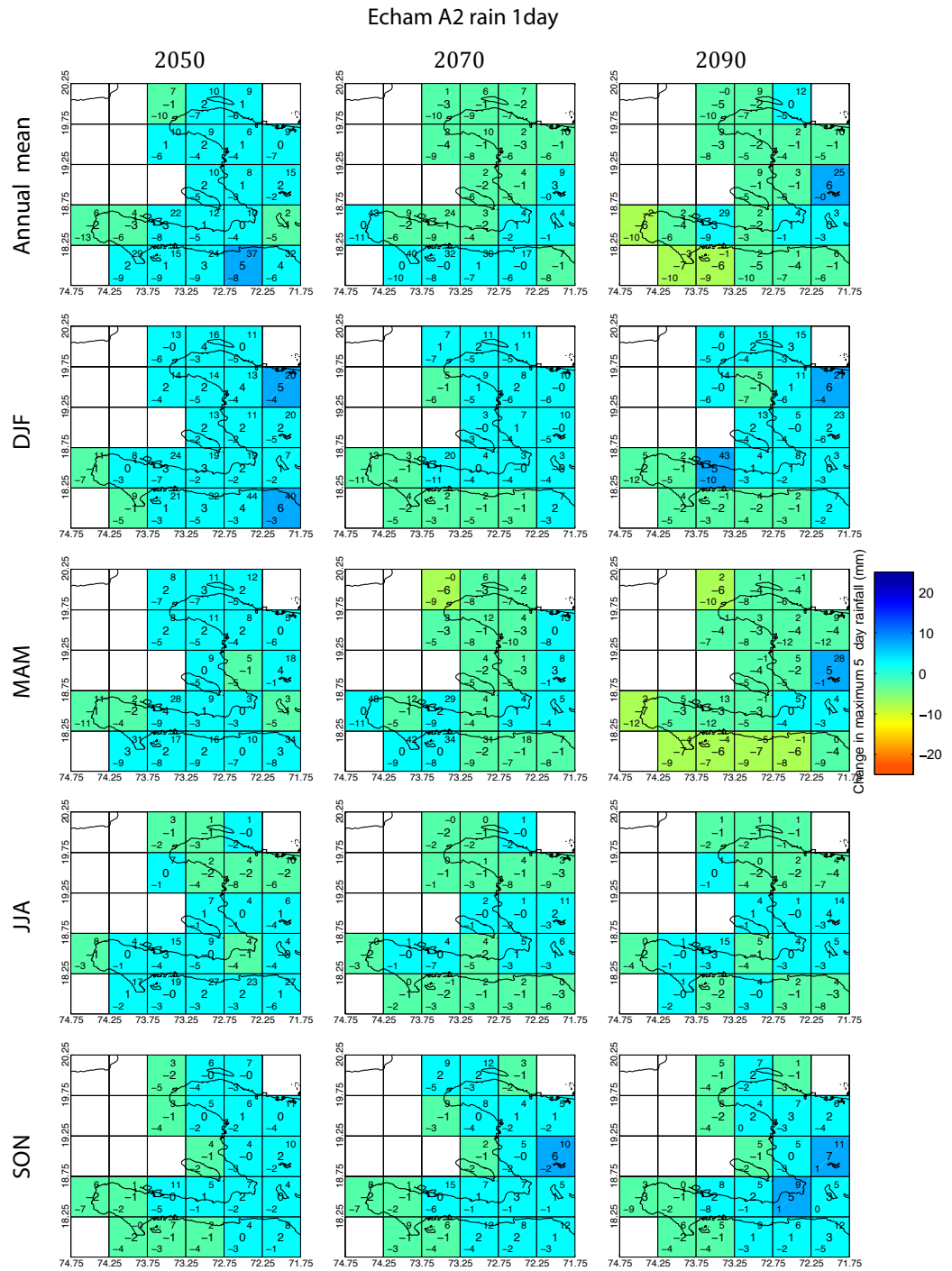


Figure 9.2

ANNEXE II

Echam B2 rain 1day

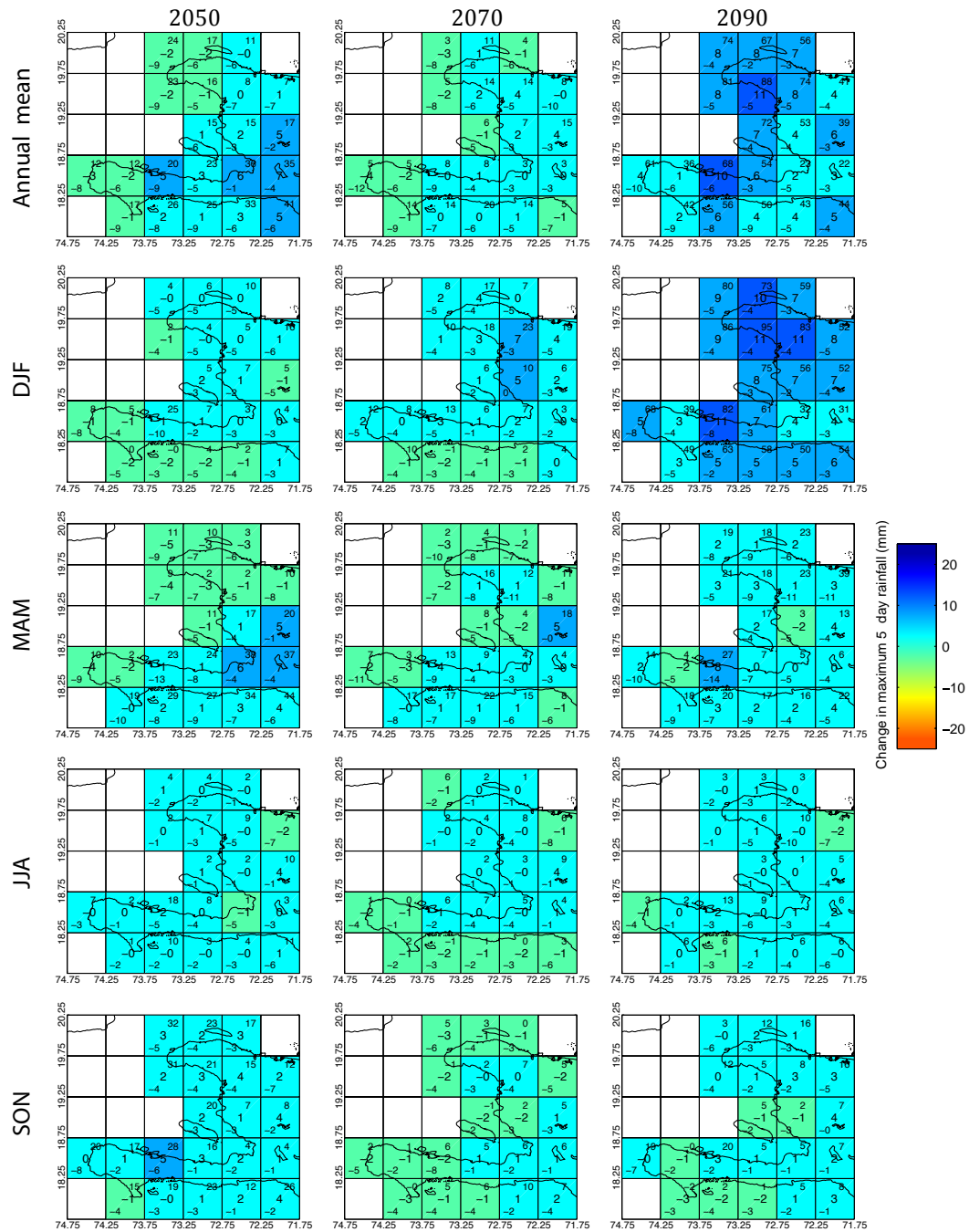


Figure 9.3

Echam rain 5 day

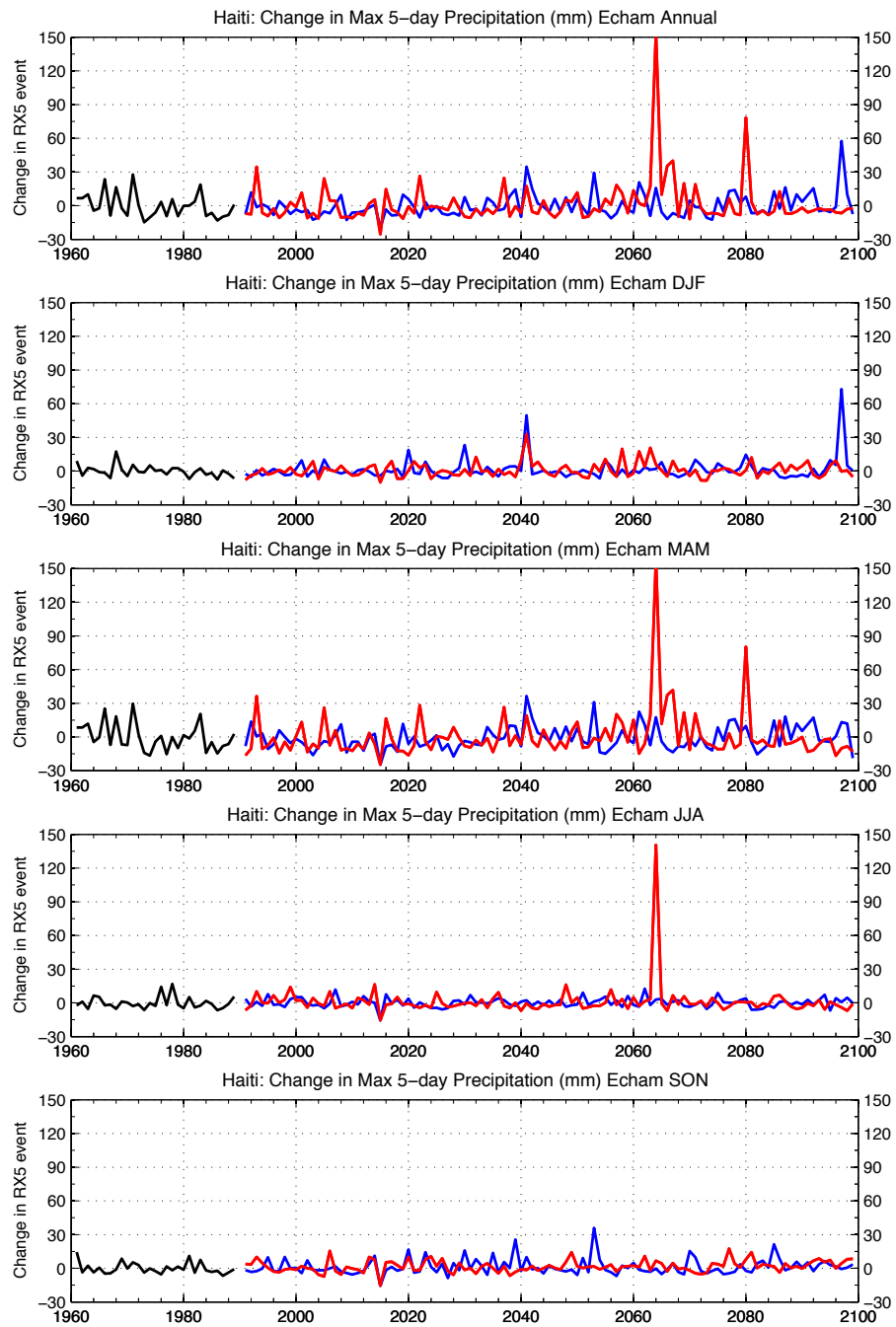


Figure 10.1

ANNEXE II

Echam A2 rain 5 day

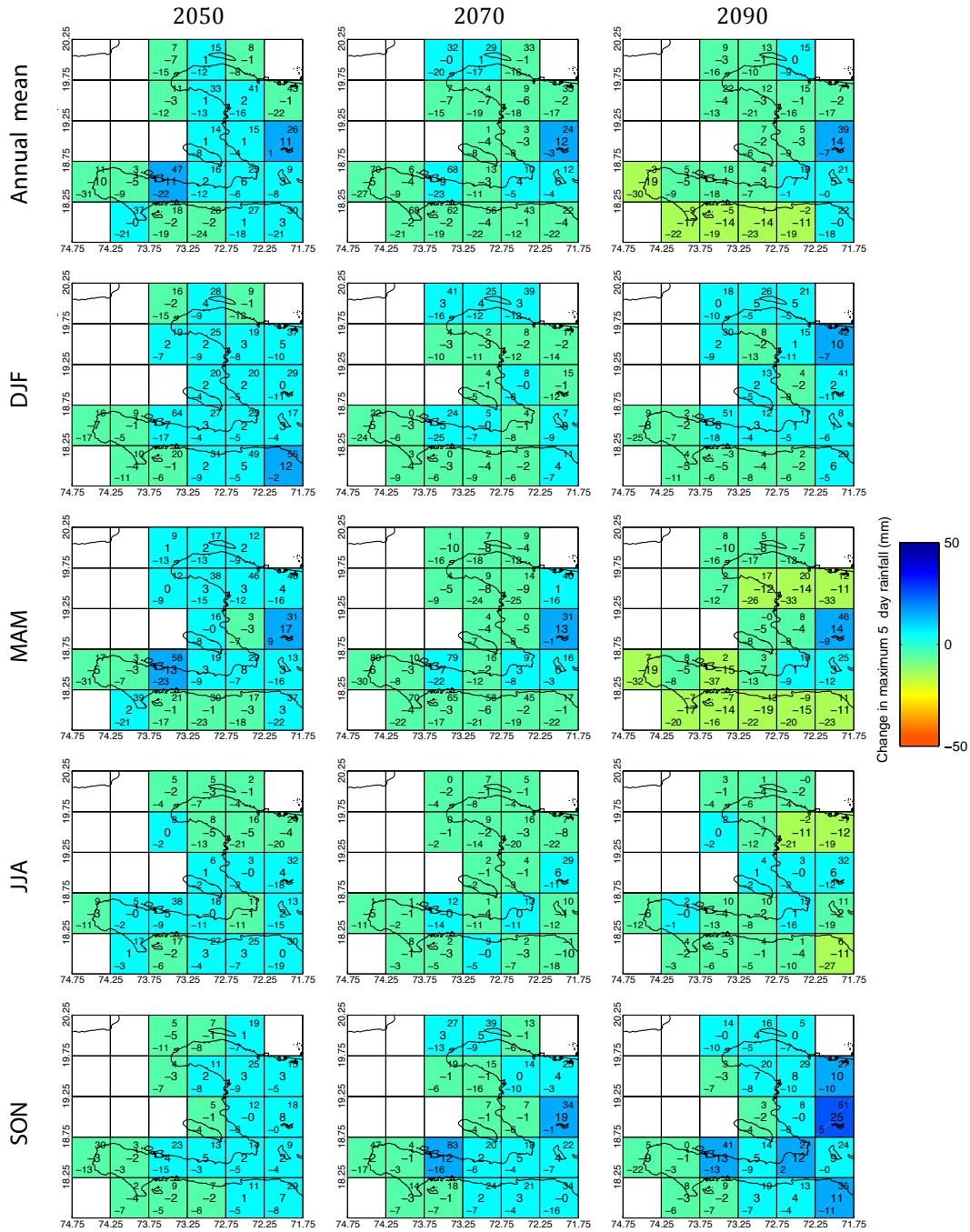


Figure 10.2

ANNEXE II

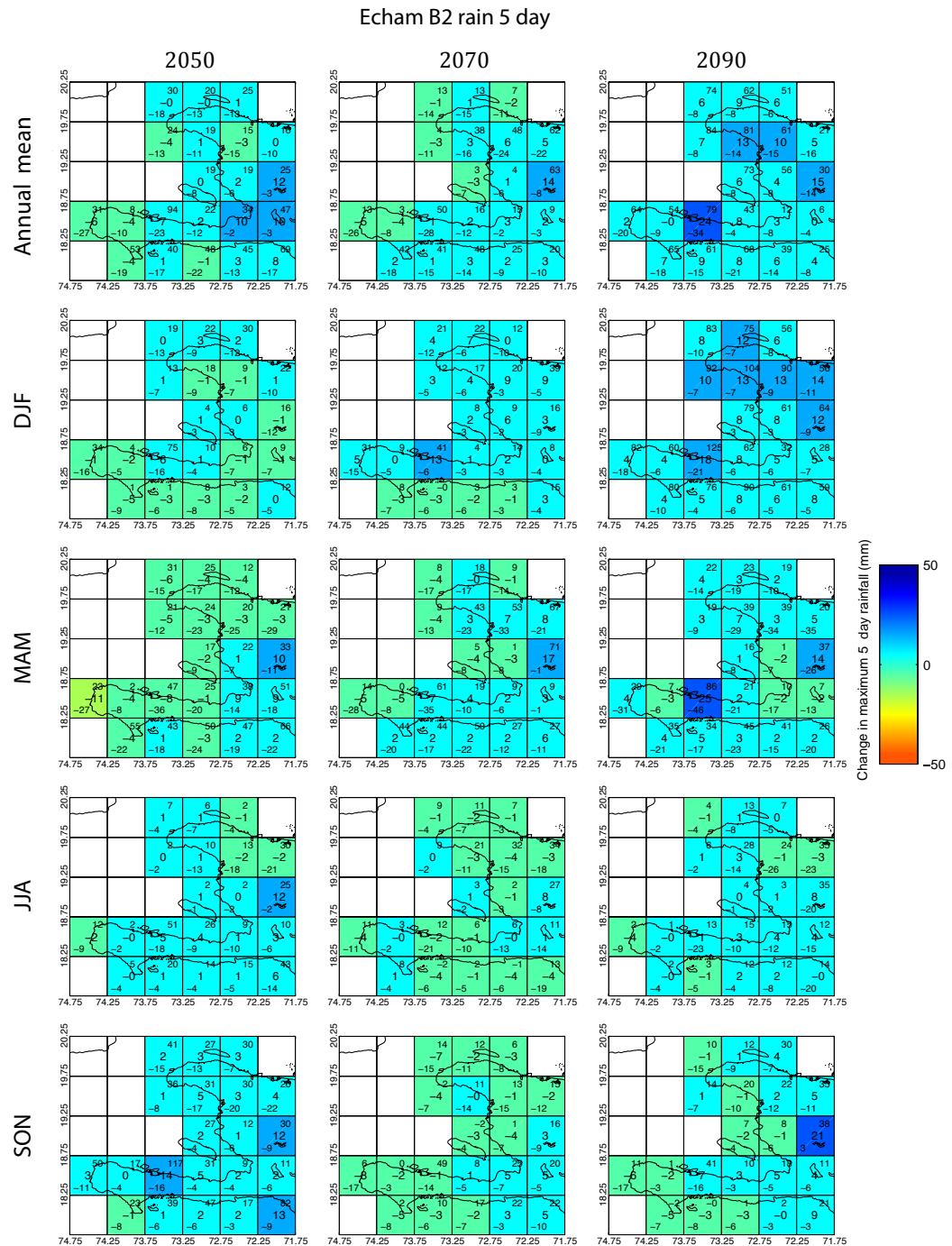


Figure 10.3

ANNEXE III

HADLEY

Dans cette annexe les résultats obtenus avec PRECIS considérant le forçage du modèle Hadley sont présentés.

Légendes des figures et tables :

Pour chaque des suivantes variables une section de la Table 1 et trois figures sont produites:

- Température moyenne
- Moyenne des précipitations mensuelles
- Fréquence de jours 'chaud'
- Fréquence des jours 'froid'
- Fréquence des nuits 'chaud'
- Fréquence des nuits 'froid'
- Proportion de total des précipitations tombant à des événements «extrêmes»
- Maximum des précipitations 1 jour
- Maximum des précipitations

La description des calculs faits pour obtenir les variables listées ci-dessus est précisée dans le document annexe « Documentation calculs ».

Table 1:

La moyenne et la tendance pour la période 1961-1989 sont indiquées dans les colonnes 2 et 3. Les valeurs mensuelles sont d'abord moyennes spatialement. Les tendances significatives au 95% sont indiquées avec une étoile noire dans la colonne 4. Dans la colonne 5 le scénario utilisée (A2 ou B2) est indiquée. Les colonnes suivantes indiquent l'incrément (minimum, moyenne et maximum) enregistré pour les périodes des années 2070 et 2090. Les données correspondant a la période 2050 ne sont pas disponible, motive pour le quelle il n'y a pas de résultats dans la colonne correspondant.

Figure 1:

Moyenne pendant les périodes contrôle (1961-1989) et futures (2070-2099). Les valeurs mensuelles sont d'abord moyennes spatialement puis par an (lignes en gras). Les lignes rouges et bleues correspondent au scénario A2 et B2 respectivement. Les régions ombragées correspondent aux valeurs minimum et maximum de chaque année. Le modèle ne donne pas de données entre les années 1990 et 2059.

Figure 2 :

Moyenne pendant les périodes futures (2070', 2090') sur chaque pixel pour le scénario A2. Le modèle ne donne pas de données entre les années 1990 et 2059.

Figure 3 :

Moyenne pendant les périodes futures (2070', 2090') sur chaque pixel pour le scénario B2. Le modèle ne donne pas de données entre les années 1990 et 2059.

ANNEXE III

TABLE 1

Hadley	Observed Mean 1961-89	Observed Trend 1961-89		Projected changes by the 2050s			Projected changes by the 2070s			Projected changes by the 2090s		
				Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
Temperature												
	°C	Change in °C per decade		Change in °C			Change in °C			Change in °C		
Annual	24.6	0.001	A2	-	-	-	2.0	2.8	4.0	2.8	3.6	4.7
			B2	-	-	-	1.4	2.3	3.1	1.7	2.7	3.5
DJF	23.2	0.062	A2	-	-	-	2.1	2.8	3.4	2.8	3.7	4.5
			B2	-	-	-	1.7	2.2	2.9	2.1	2.8	3.5
MAM	24.2	-0.024	A2	-	-	-	2.0	2.8	3.7	2.8	3.5	4.7
			B2	-	-	-	1.4	2.2	3.1	1.8	2.7	3.5
JJA	25.9	0.037	A2	-	-	-	2.4	2.9	4.0	2.9	3.8	4.5
			B2	-	-	-	1.7	2.4	3.0	1.9	2.8	3.4
SON	25.2	-0.049	A2	-	-	-	2.2	2.6	3.3	2.8	3.4	4.1
			B2	-	-	-	1.6	2.2	2.9	1.7	2.4	3.4
Precipitation												
	mm per month	Change in mm per decade		Change in mm per month			Change in mm per month			Change in mm per month		
Annual	57.8	-7.96	* A2	-	-	-	-67	-15	94	-81	-25	217
			B2	-	-	-	-68	-15	103	-70	-16	105
DJF	17.7	-7.59	* A2	-	-	-	-26	0	26	-24	-2	28
			B2	-	-	-	-25	0	29	-24	1	103
MAM	48.3	-1.84	A2	-	-	-	-43	-4	94	-59	3	217
			B2	-	-	-	-34	-6	63	-46	-2	105
JJA	69.2	-8.26	* A2	-	-	-	-56	-33	-11	-71	-39	-15
			B2	-	-	-	-64	-29	34	-58	-28	8
SON	96.3	-12.32	* A2	-	-	-	-67	-26	24	-81	-60	-29
			B2	-	-	-	-68	-25	103	-70	-37	55

ANNEXE III

TABLE 1 (suite)

Hadley	Observed Mean 1961-89	Observed Trend 1961-89		Projected changes by the 2050s			Projected changes by the 2070s			Projected changes by the 2090s		
				Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
Precipitation (%)												
	mm per month	Change in % per decade		% Change			% Change			% Change		
Annual	57.8	-21.25	* A2	-	-	-	-97	-17	371	-91	-21	1001
			B2	-	-	-	-96	-10	318	-89	-5	858
DJF	17.7	-39.19	* A2	-	-	-	-97	8	238	-91	2	309
			B2	-	-	-	-96	22	318	-89	34	858
MAM	48.3	-6.06	A2	-	-	-	-73	-18	135	-81	33	1001
			B2	-	-	-	-70	-10	154	-72	4	174
JJA	69.2	-11.74	A2	-	-	-	-71	-49	-14	-84	-56	-22
			B2	-	-	-	-72	-32	81	-63	-31	27
SON	96.3	-13.04	* A2	-	-	-	-71	-28	28	-89	-63	-28
			B2	-	-	-	-72	-18	136	-67	-31	76
Frequency of Hot Days (TX90p)												
	% Frequency	Change in frequency per decade		Future % frequency			Future % frequency			Future % frequency		
Annual	9.9	1.42	A2	-	-	-	60	96	100	80	99	100
			B2	-	-	-	53	93	100	70	96	100
DJF	9.8	4.03	* A2	-	-	-	80	97	100	90	99	100
			B2	-	-	-	73	94	100	80	98	100
MAM	9.8	-1.75	A2	-	-	-	60	93	100	80	97	100
			B2	-	-	-	63	89	100	70	92	100
JJA	9.8	0.63	A2	-	-	-	93	99	100	97	100	100
			B2	-	-	-	63	96	100	80	99	100
SON	9.9	1.17	A2	-	-	-	77	96	100	97	100	100
			B2	-	-	-	53	93	100	73	96	100

TABLE 1 (suite)

Hadley	Observed Mean 1961-89	Observed Trend 1961-89		Projected changes by the 2050s			Projected changes by the 2070s			Projected changes by the 2090s		
				Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
Frequency of Hot Nights (TN90p)												
	% Frequency	Change in frequency per decade		Future % frequency			Future % frequency			Future % frequency		
Annual	9.8	-0.73	A2	-	-	-	63	97	100	81	99	100
			B2	-	-	-	57	92	100	56	97	100
DJF	9.5	1.13	A2	-	-	-	68	95	100	89	99	100
			B2	-	-	-	57	88	100	80	97	100
MAM	9.7	-0.76	A2	-	-	-	63	95	100	81	98	100
			B2	-	-	-	60	86	100	56	92	100
JJA	9.9	0.24	A2	-	-	-	100	100	100	100	100	100
			B2	-	-	-	73	99	100	100	100	100
SON	9.9	-1.11	A2	-	-	-	90	99	100	100	100	100
			B2	-	-	-	63	95	100	87	98	100
Frequency of Cold Days (TX10p)												
	% Frequency	Change in frequency per decade		Future % frequency			Future % frequency			Future % frequency		
Annual	9.8	-1.41	A2	-	-	-	0	0	3	0	0	0
			B2	-	-	-	0	0	7	0	0	7
DJF	10.0	-2.76	A2	-	-	-	0	0	0	0	0	0
			B2	-	-	-	0	0	0	0	0	7
MAM	9.7	0.28	A2	-	-	-	0	0	3	0	0	0
			B2	-	-	-	0	1	7	0	0	3
JJA	9.8	-0.92	A2	-	-	-	0	0	0	0	0	0
			B2	-	-	-	0	0	0	0	0	0
SON	9.8	-0.94	A2	-	-	-	0	0	0	0	0	0
			B2	-	-	-	0	0	7	0	0	0

ANNEXE III

TABLE 1 (suite)

Echam	Observed Mean 1961-89	Observed Trend 1961-89		Projected changes by the 2050s			Projected changes by the 2070s			Projected changes by the 2090s		
				Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
Frequency of Cold Nights (TN10p)												
	% Frequency	Change in frequency per decade		Future % frequency			Future % frequency			Future % frequency		
Annual	9.8	0.34	A2	-	-	-	0	0	3	0	0	0
			B2	-	-	-	0	0	17	0	0	13
DJF	9.8	-1.40	A2	-	-	-	0	0	0	0	0	0
			B2	-	-	-	0	0	7	0	0	4
MAM	9.8	0.12	A2	-	-	-	0	0	3	0	0	0
			B2	-	-	-	0	1	17	0	0	13
JJA	9.9	0.92	A2	-	-	-	0	0	0	0	0	0
			B2	-	-	-	0	0	0	0	0	0
SON	9.8	1.36	A2	-	-	-	0	0	0	0	0	0
			B2	-	-	-	0	0	0	0	0	0
% total rainfall falling in Heavy Events (R95pct)												
	%	Change in % per decade		Change in %			Change in %			Change in %		
Annual	26.1	-2.97	A2	-	-	-	-20	-9	1	-18	-6	15
			B2	-	-	-	-24	-6	4	-24	-9	8
DJF	53.4	-16.87	* A2	-	-	-	-56	1	13	-37	-9	13
			B2	-	-	-	-56	-8	10	-48	-7	25
MAM	33.1	1.87	A2	-	-	-	-36	-12	8	-36	0	40
			B2	-	-	-	-36	-10	2	-36	-9	25
JJA	18.2	-2.68	A2	-	-	-	-20	-14	-10	-20	-10	12
			B2	-	-	-	-20	-5	29	-20	-12	7
SON	23.6	-1.73	A2	-	-	-	-25	-12	0	-25	-23	-18
			B2	-	-	-	-25	-8	12	-25	-13	1

TABLE 1 (suite)

Echam	Observed Mean 1961-89	Observed Trend 1961-89		Projected changes by the 2050s			Projected changes by the 2070s			Projected changes by the 2090s		
				Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
Maximum 1-day rainfall (RX1day)												
	mm	Change in mm per decade		Change in mm			Change in mm			Change in mm		
Annual	29.7	-0.64	A2	-	-	-	-22	-12	0	-22	0	137
			B2	-	-	-	-20	-8	6	-24	-6	30
DJF	8.2	-1.99	A2	-	-	-	-5	0	6	-6	-2	8
			B2	-	-	-	-6	-2	2	-6	2	44
MAM	16.8	0.05	A2	-	-	-	-13	-6	13	-12	9	150
			B2	-	-	-	-11	-2	19	-14	-3	43
JJA	10.5	0.58	A2	-	-	-	-6	-4	-1	-6	-2	12
			B2	-	-	-	-5	-3	3	-6	-3	3
SON	22.9	0.31	A2	-	-	-	-15	-10	-1	-19	-17	-15
			B2	-	-	-	-14	-6	8	-18	-9	2
Maximum 5-day rainfall (RX5day)												
	mm	Change in mm per decade		Change in mm			Change in mm			Change in mm		
Annual	72.4	2.65	A2	-	-	-	-50	-27	-5	-52	-24	135
			B2	-	-	-	-47	-21	9	-47	-19	38
DJF	22.4	-6.05	A2	-	-	-	-17	-2	6	-14	-8	5
			B2	-	-	-	-16	-3	20	-16	4	88
MAM	42.3	2.55	A2	-	-	-	-32	-12	25	-28	3	165
			B2	-	-	-	-29	-7	24	-34	-6	67
JJA	31.6	-0.56	A2	-	-	-	-20	-15	-8	-22	-14	0
			B2	-	-	-	-20	-11	11	-21	-14	3
SON	60.8	1.59	A2	-	-	-	-39	-25	-6	-49	-41	-36
			B2	-	-	-	-36	-15	21	-42	-25	-2

ANNEXE III

Hadley A2 & B2 température time series

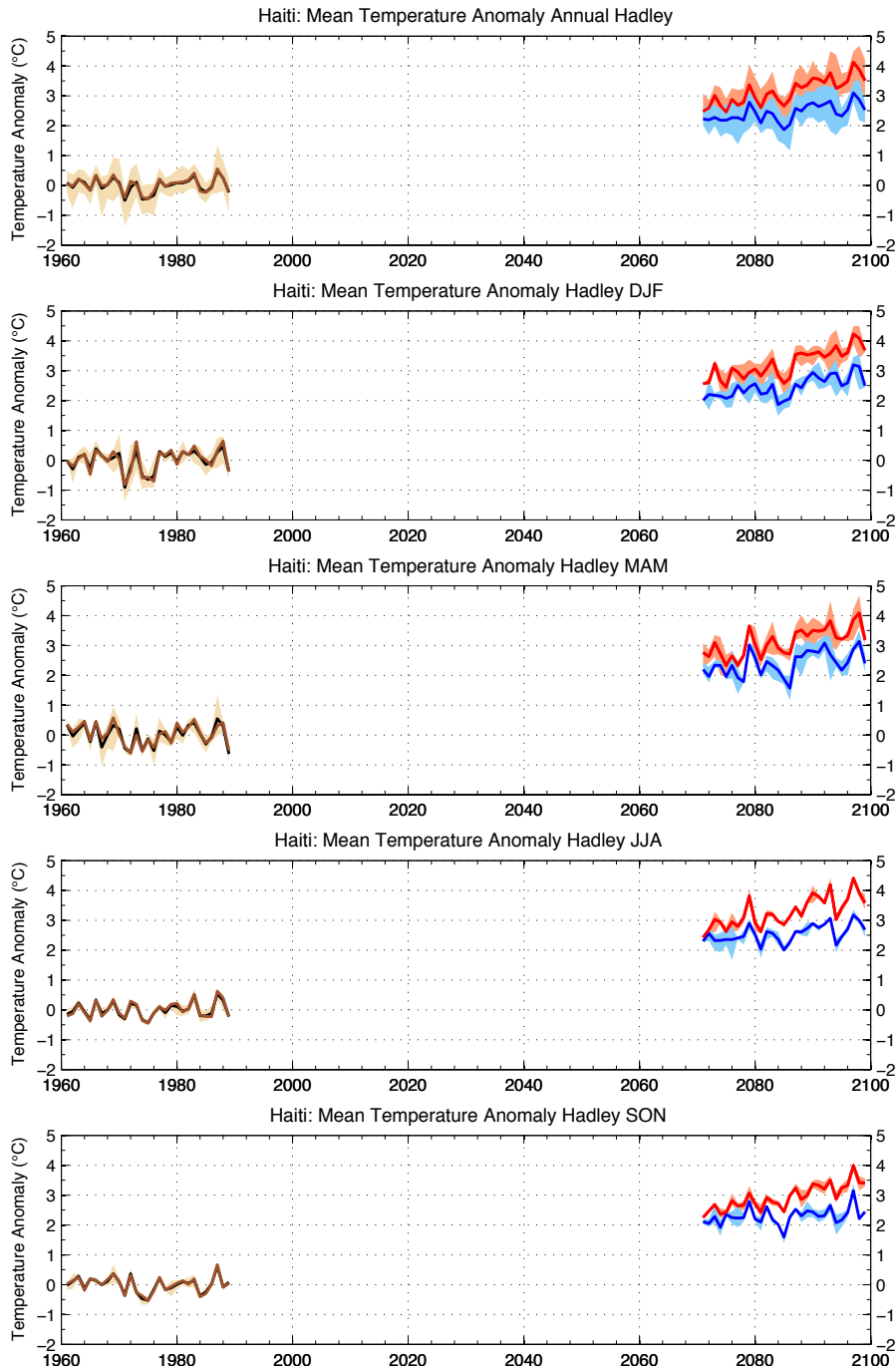


Figure 1.1

ANNEXE III

Hadley A2, température

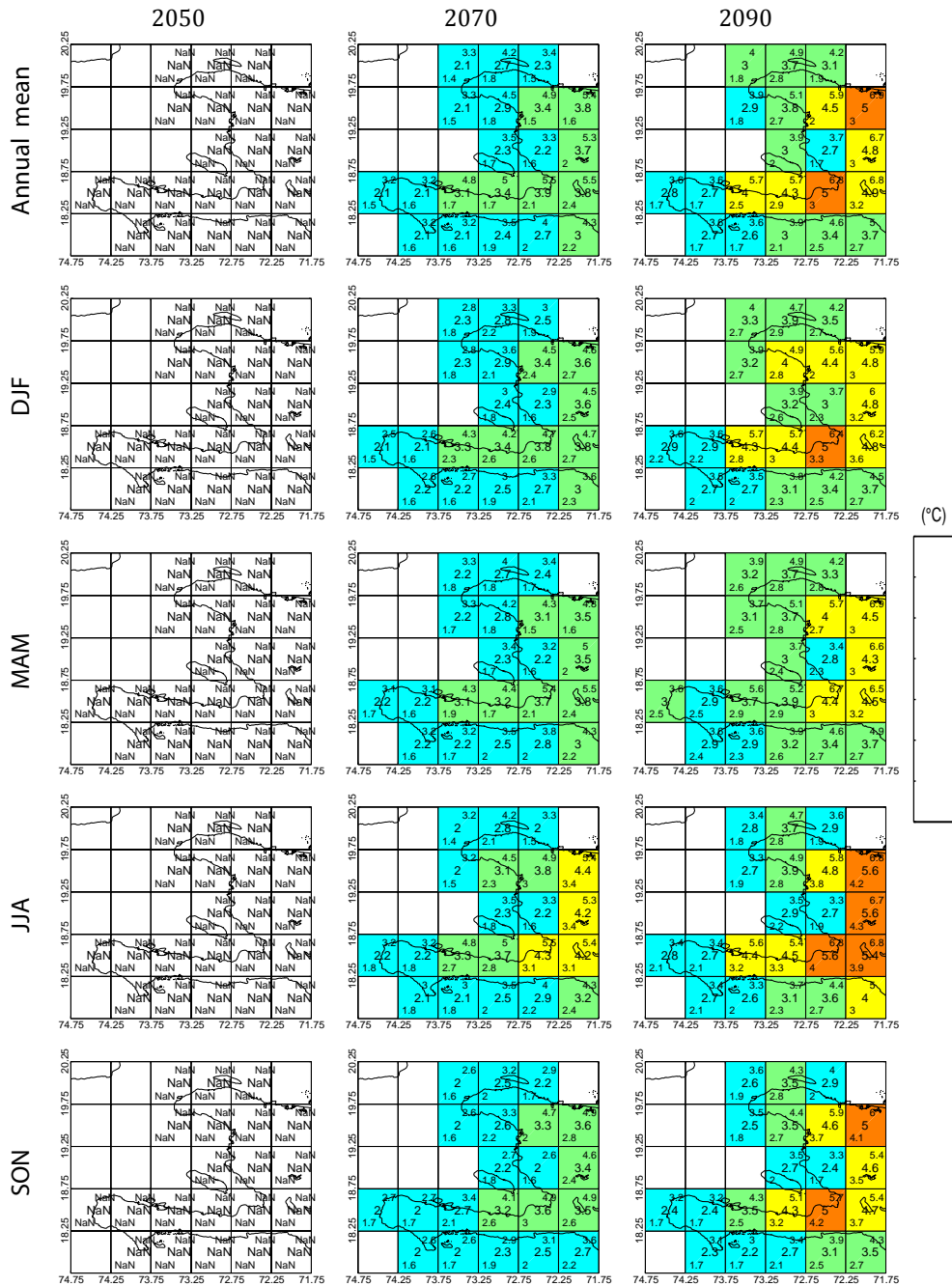


Figure 1.2

ANNEXE III

Hadley B2, temperature

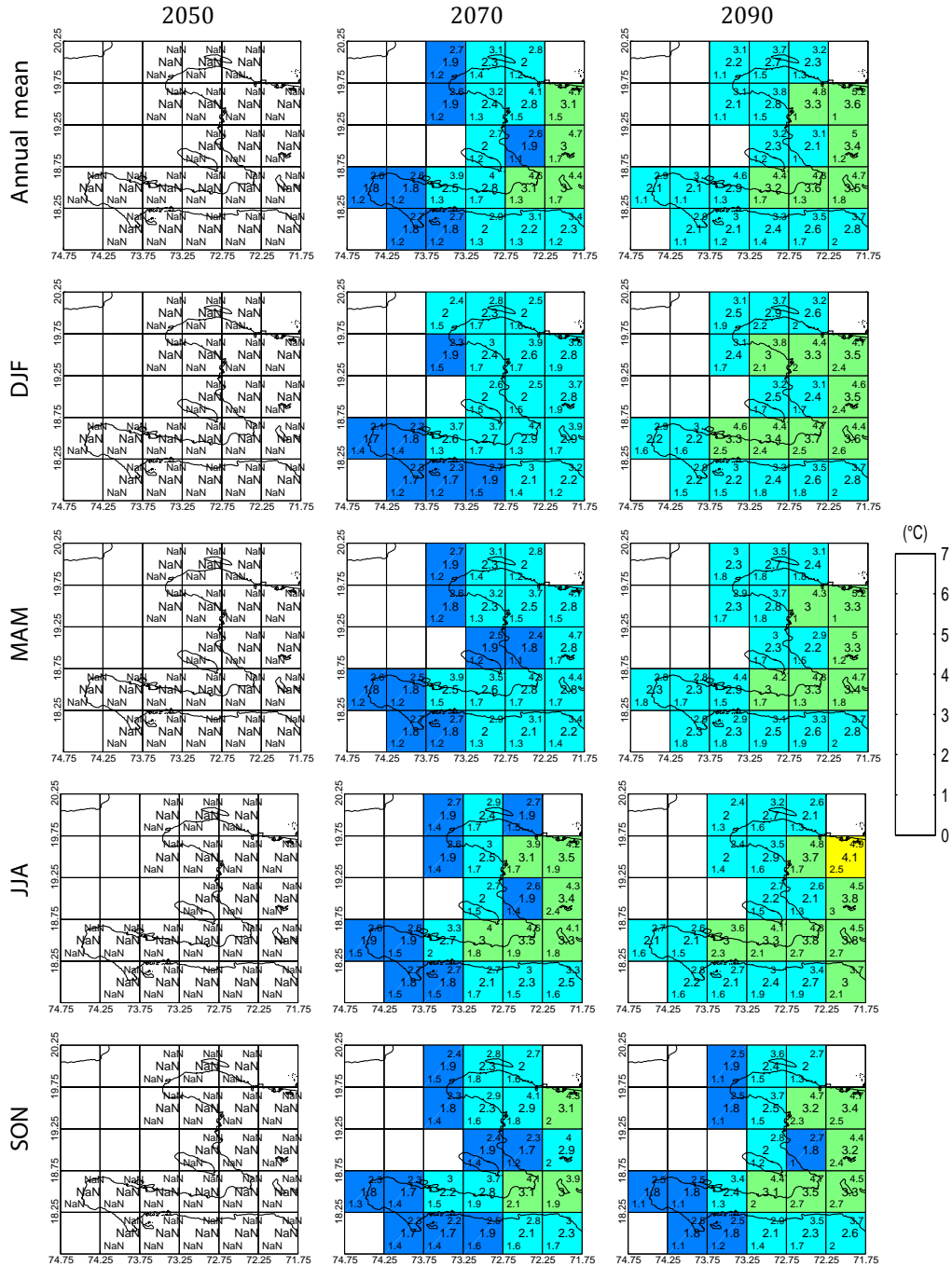


Figure 1.3

Hadley abs precipitation

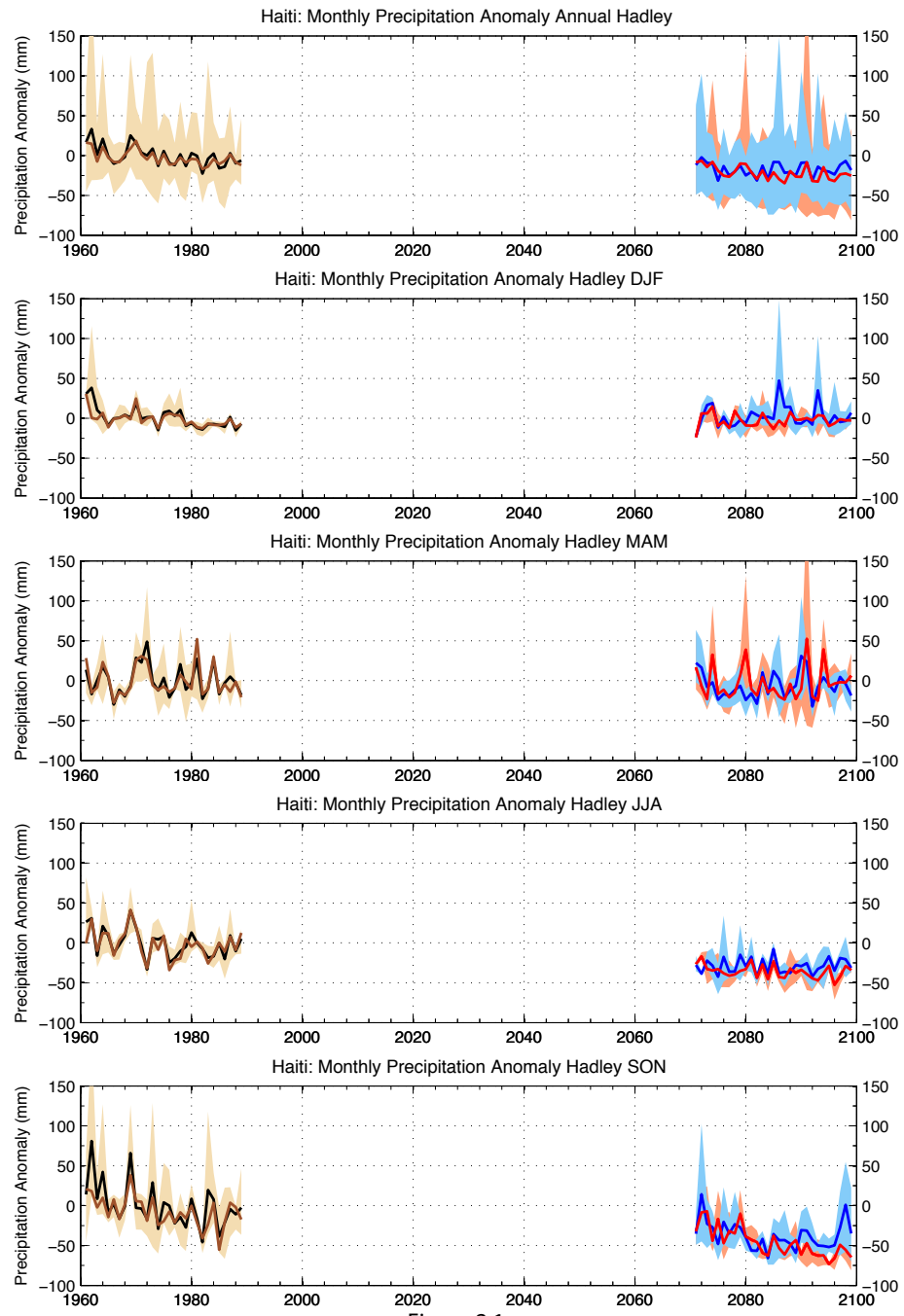


Figure 2.1

ANNEXE III

Hadley A2 abs précipitation

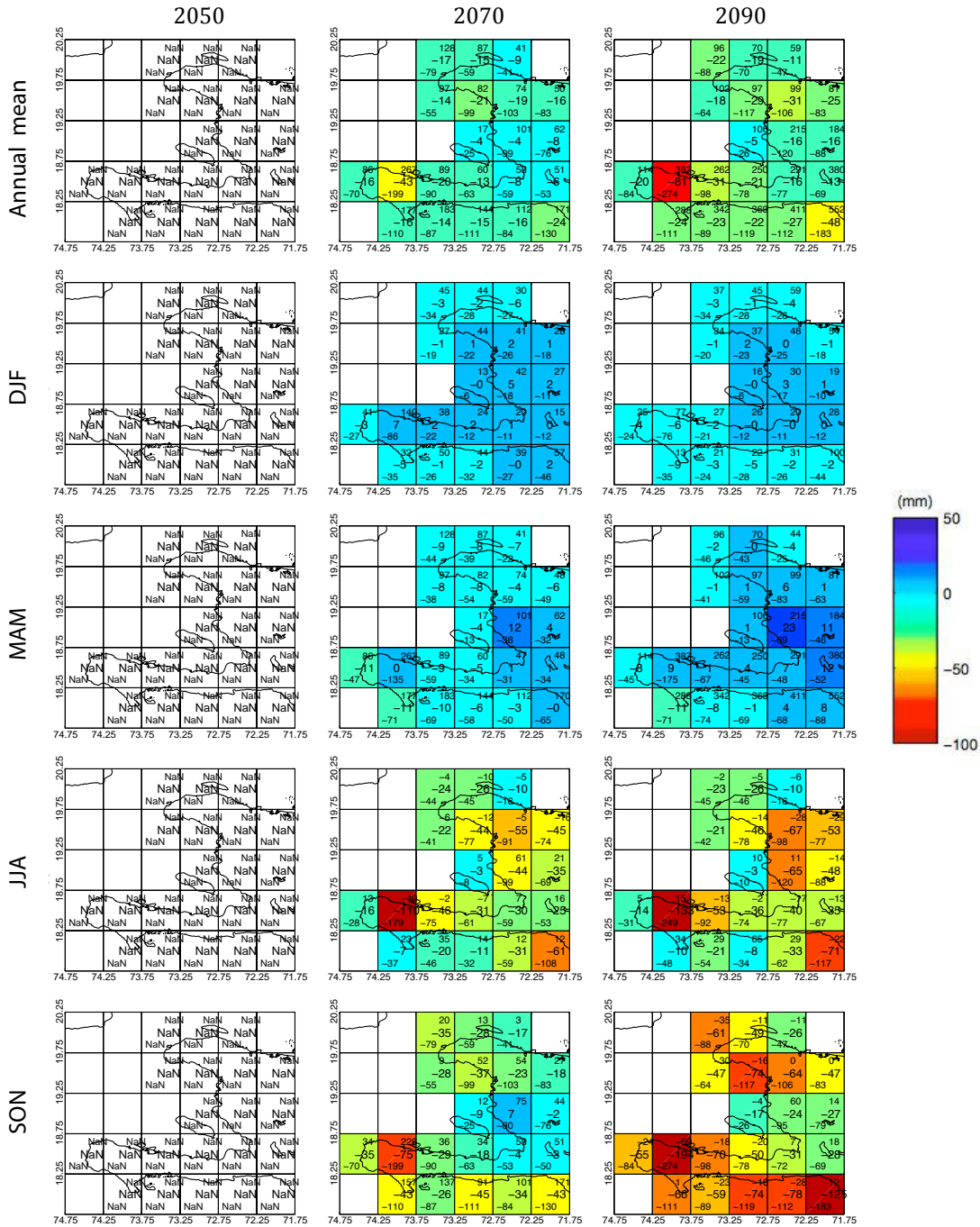


Figure 2.2

ANNEXE III

Hadley B2 abs precipitation

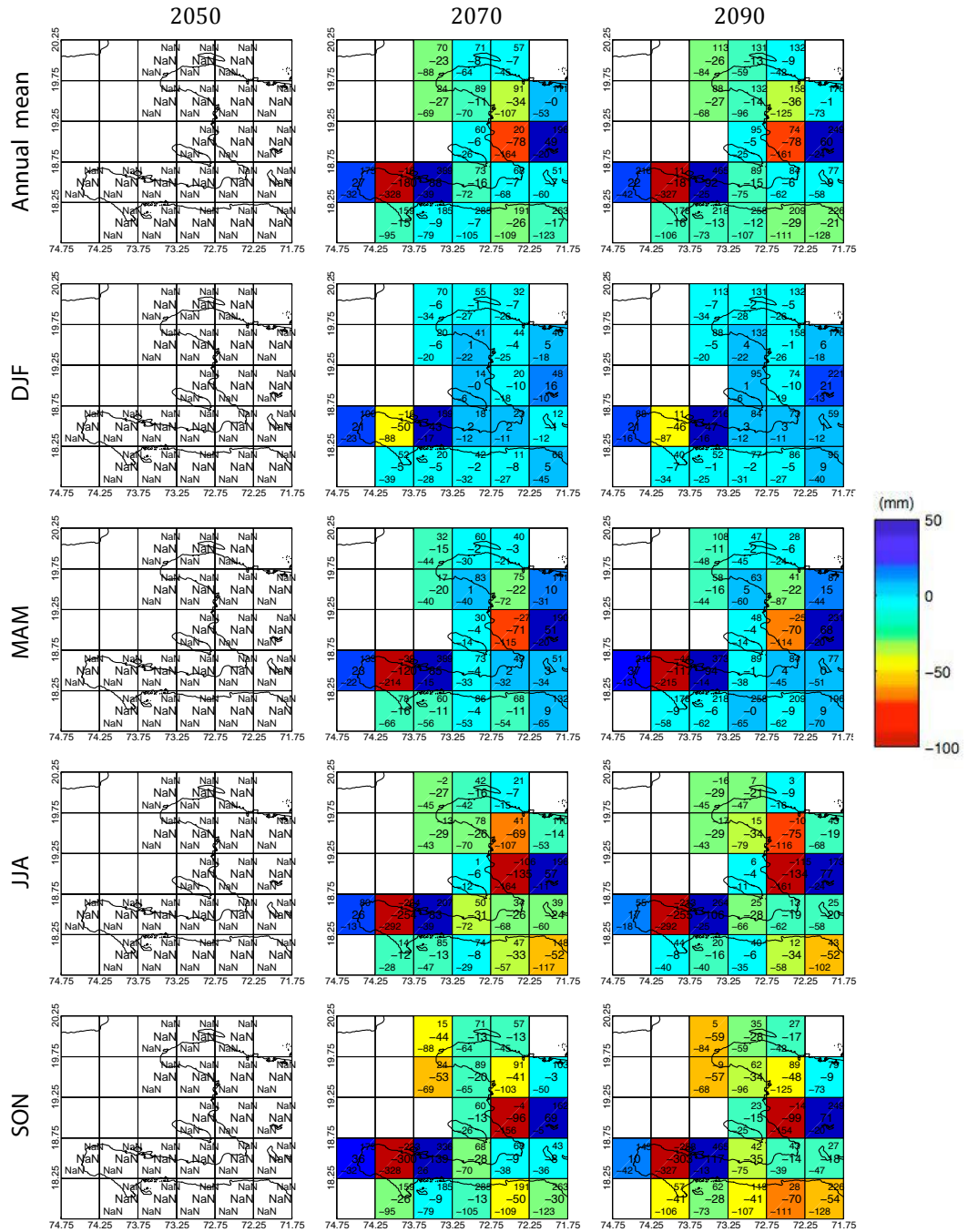


Figure 2.3

Hadley relative precipitation A2 & B2

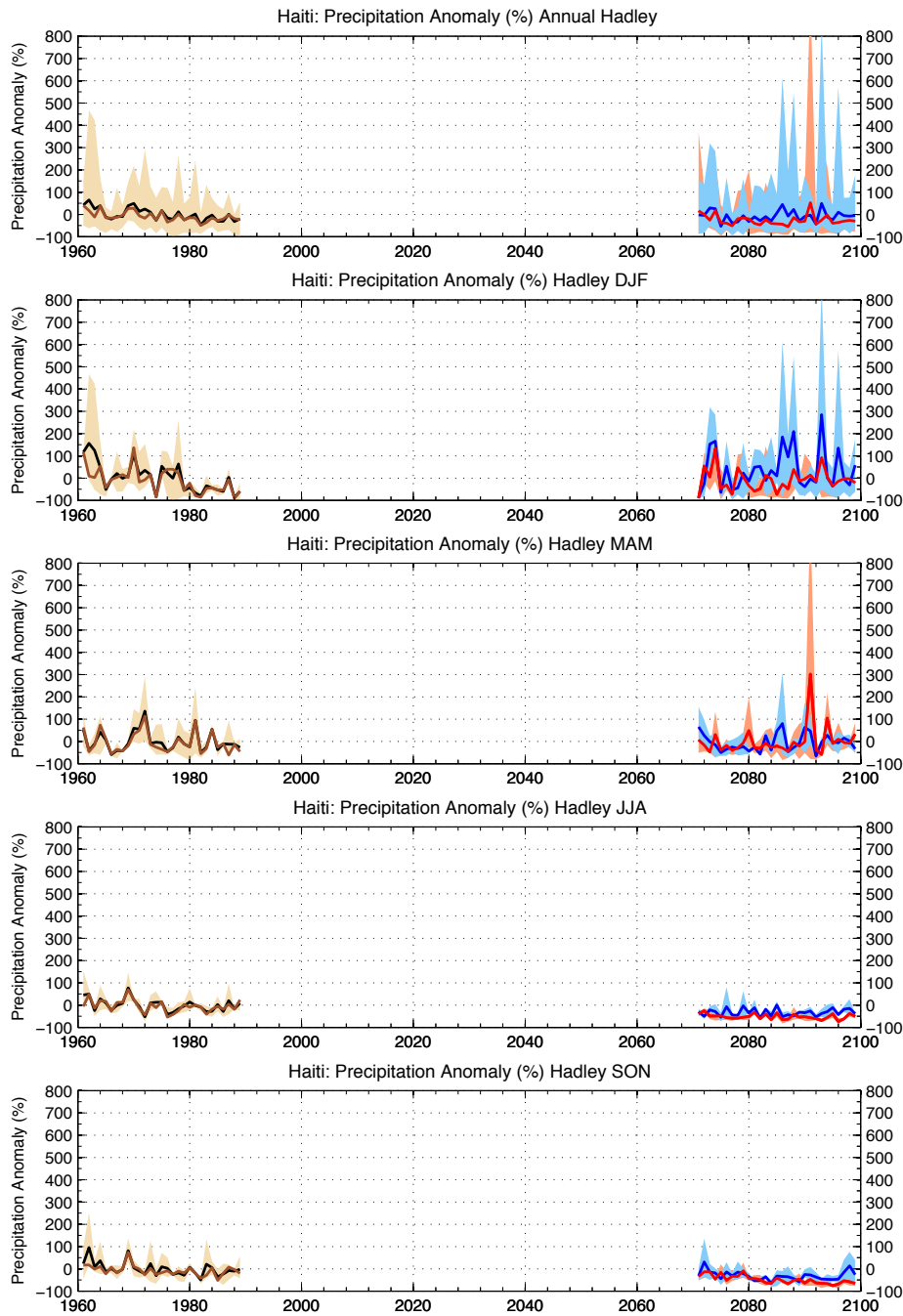


Figure 3.1

ANNEXE III

Hadley A2 rel precipitation

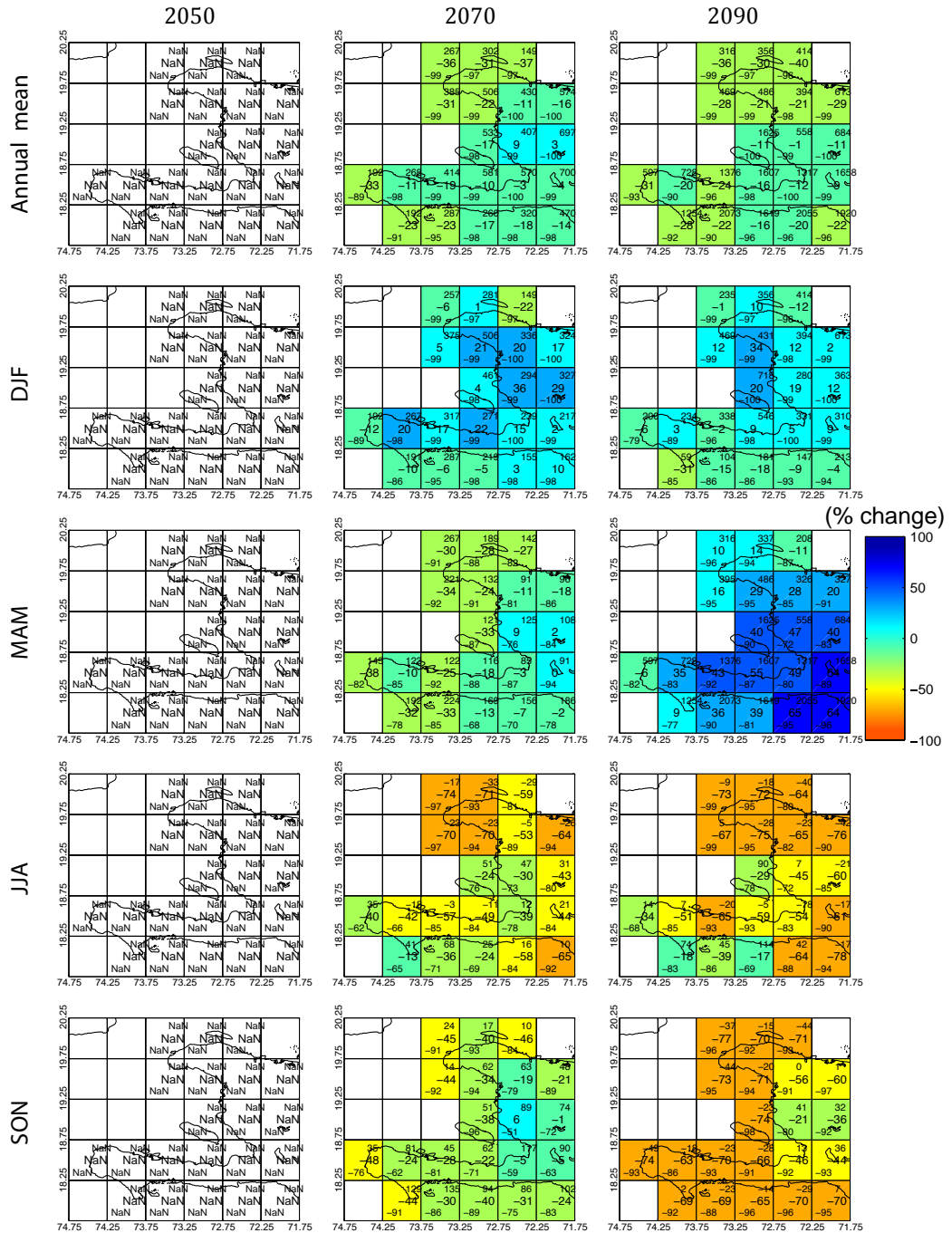


Figure 3.2

ANNEXE III

Hadley B2 rel precipitation

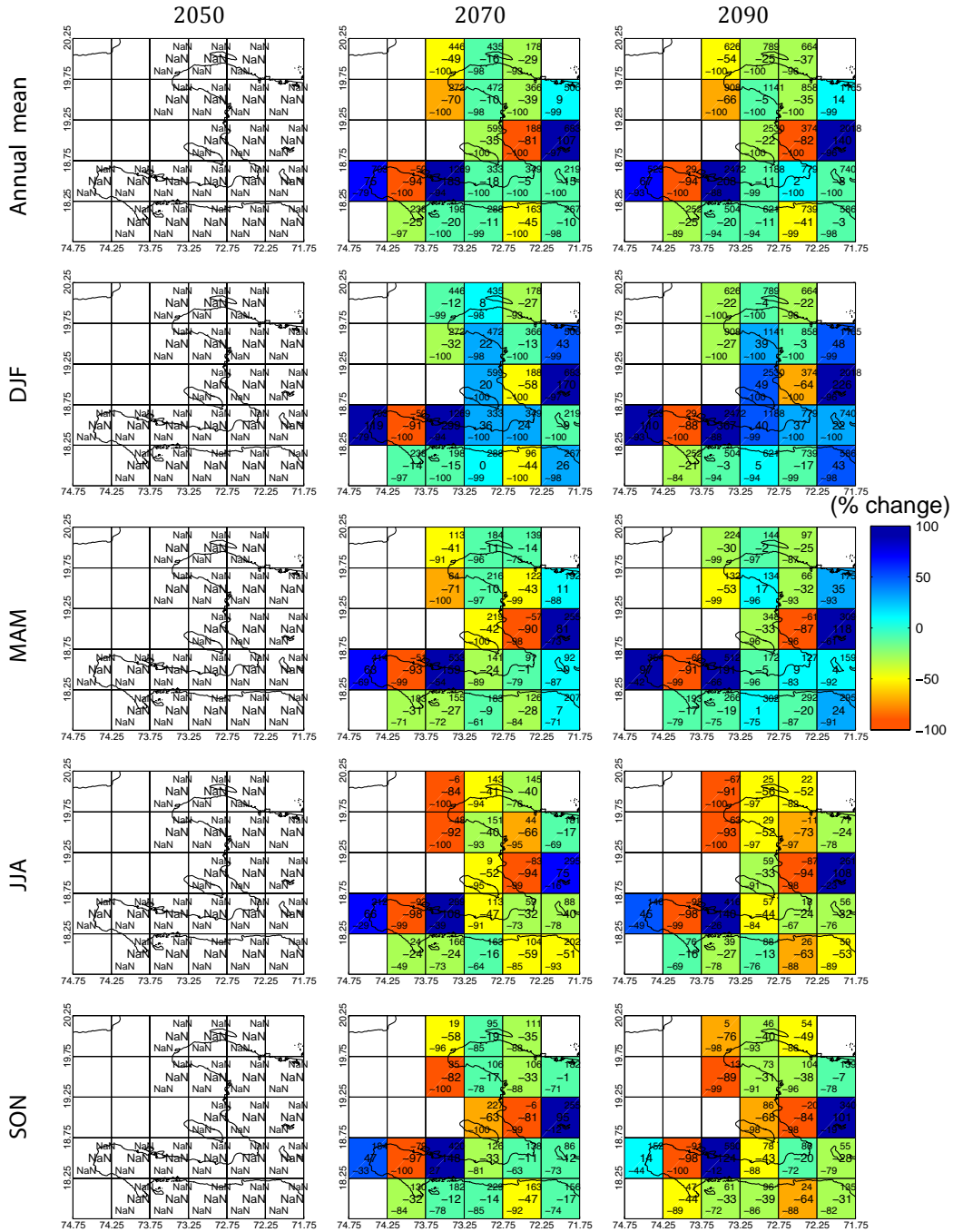


Figure 3.3

Hadley hot day frequency

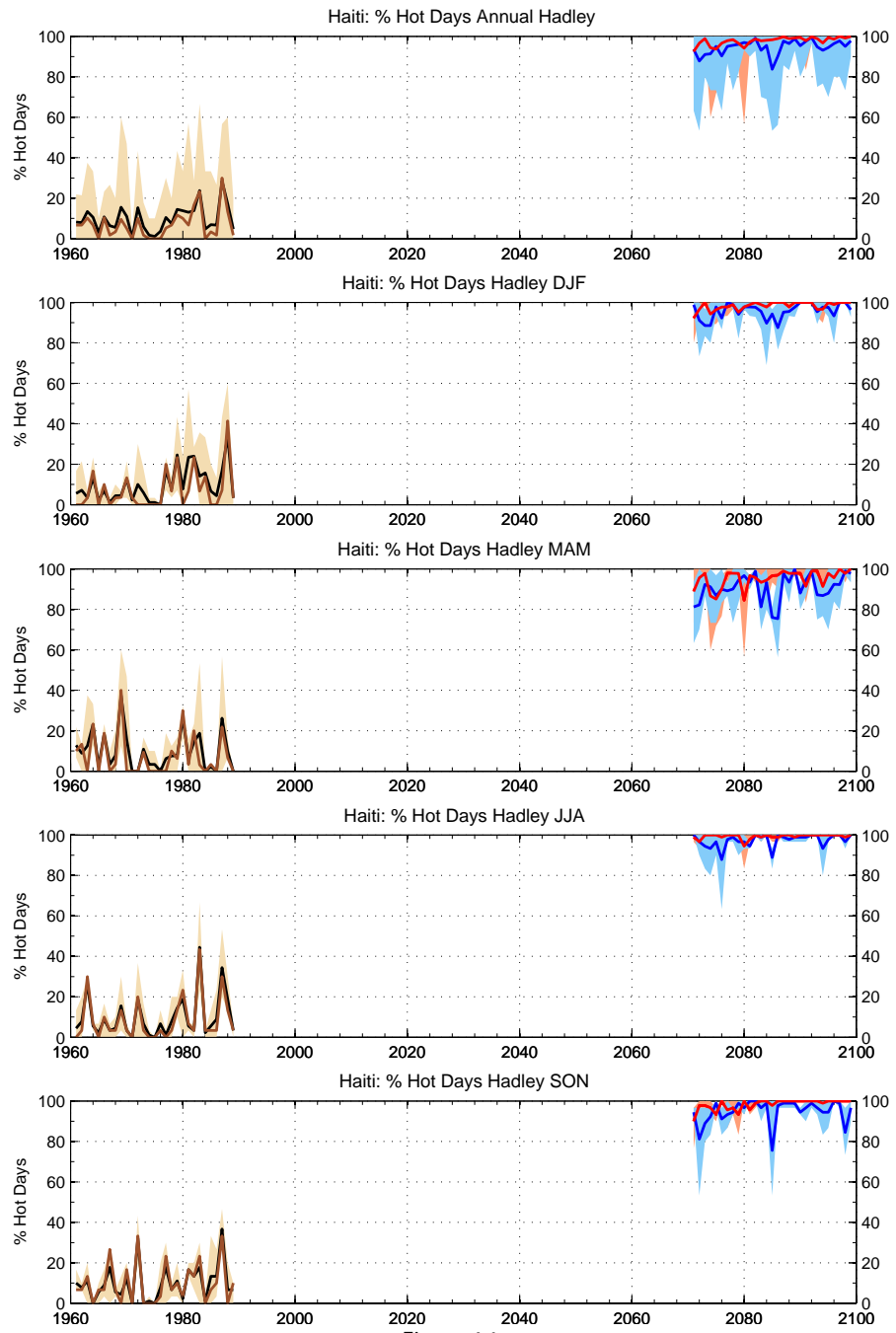


Figure 4.1

ANNEXE III

Hadley A2 freq hot days

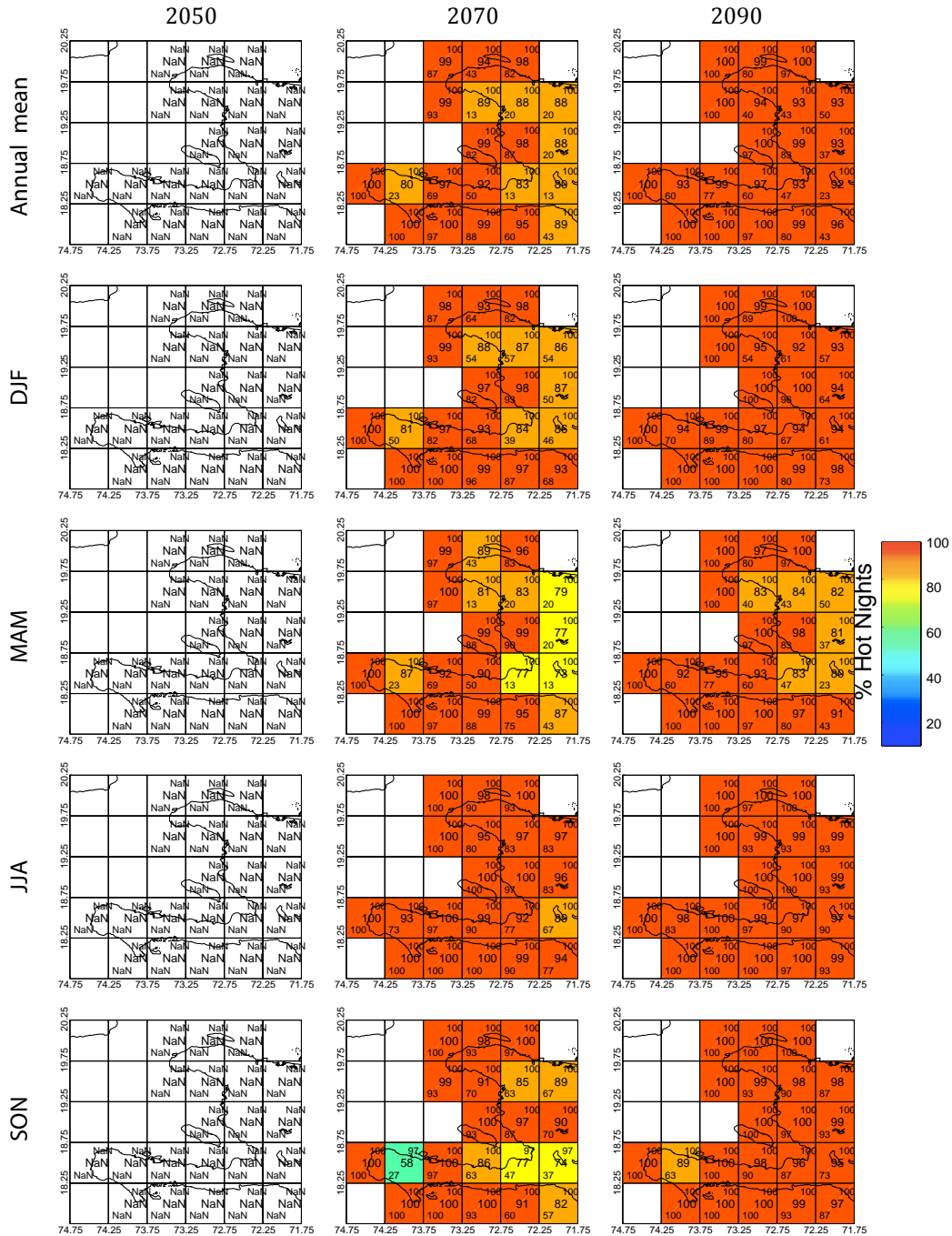


Figure 4.2

ANNEXE III

Hadley B2 frequency of hot days

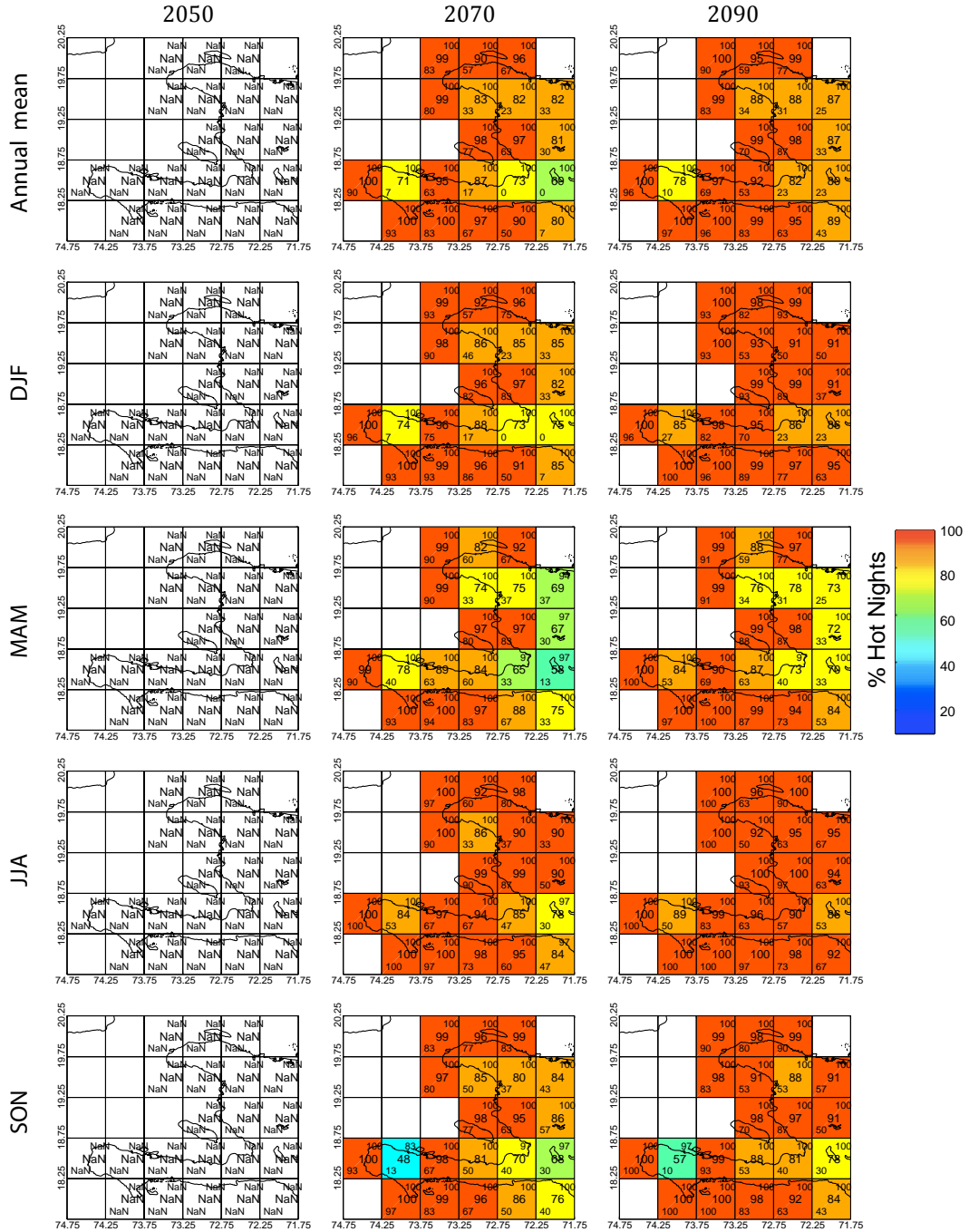


Figure 4.3

Hadley hot night frequency

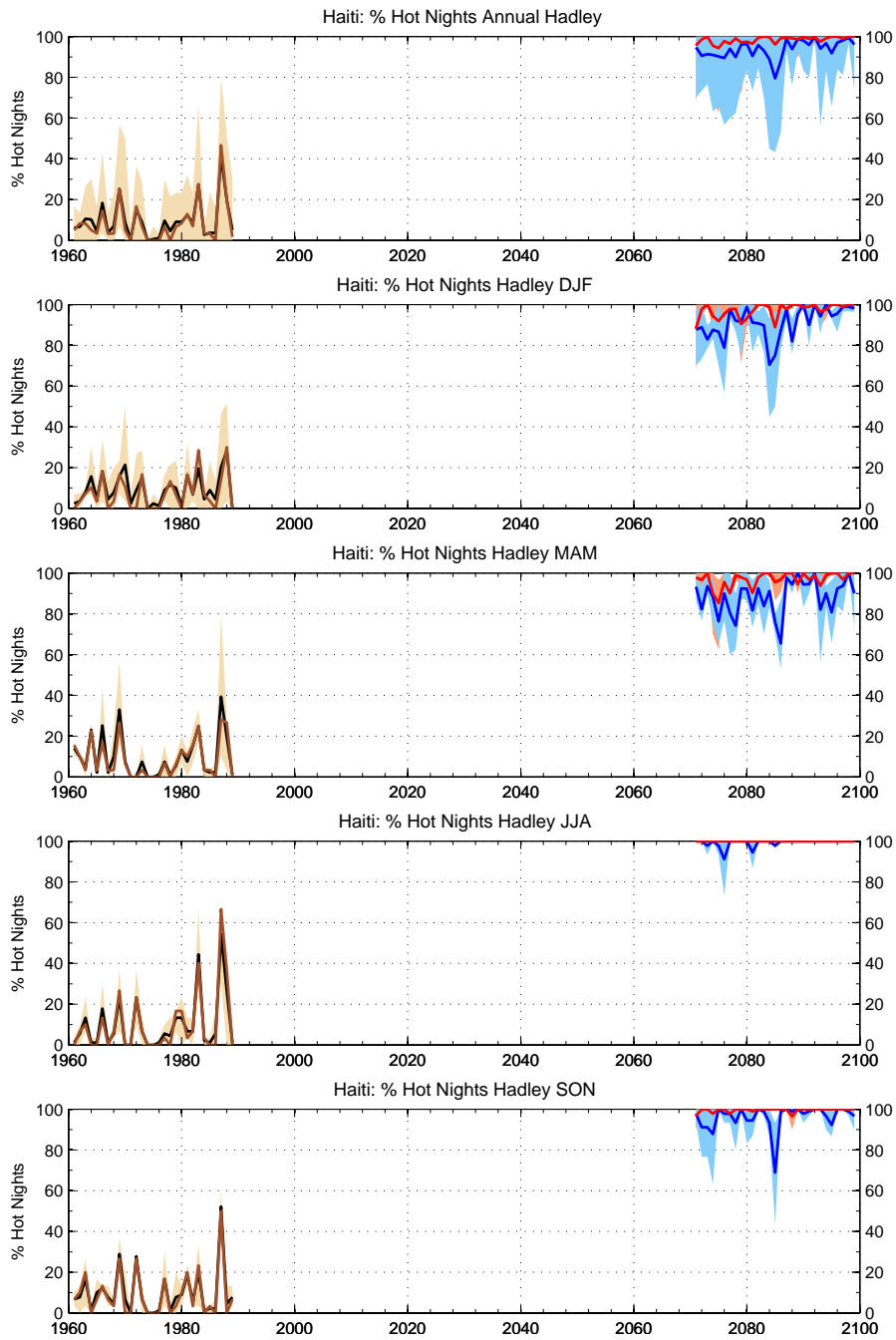
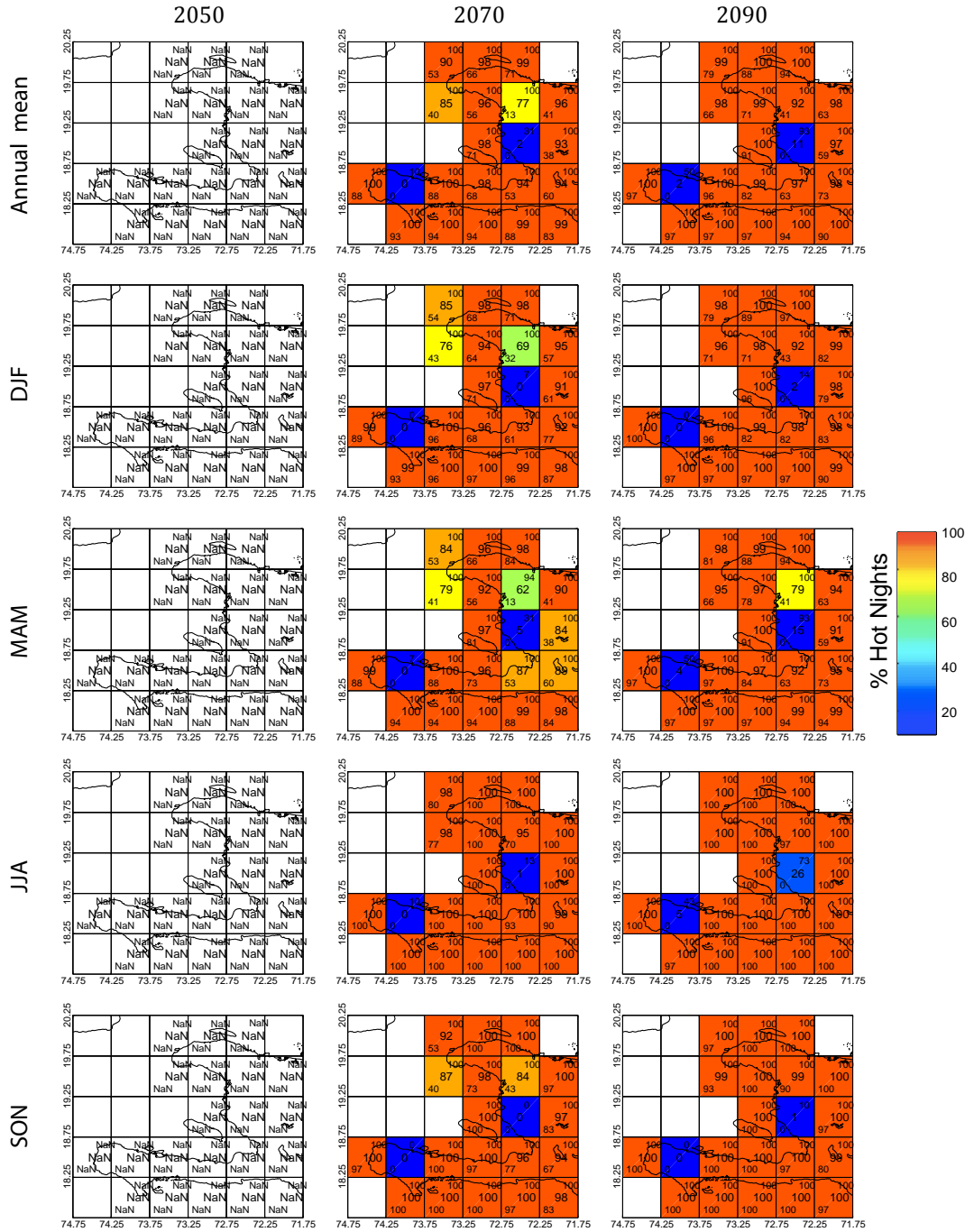


Figure 5.1

ANNEXE III

Hadley A2 freq hot nights



ANNEXE III

Hadley B2 freq hot nights

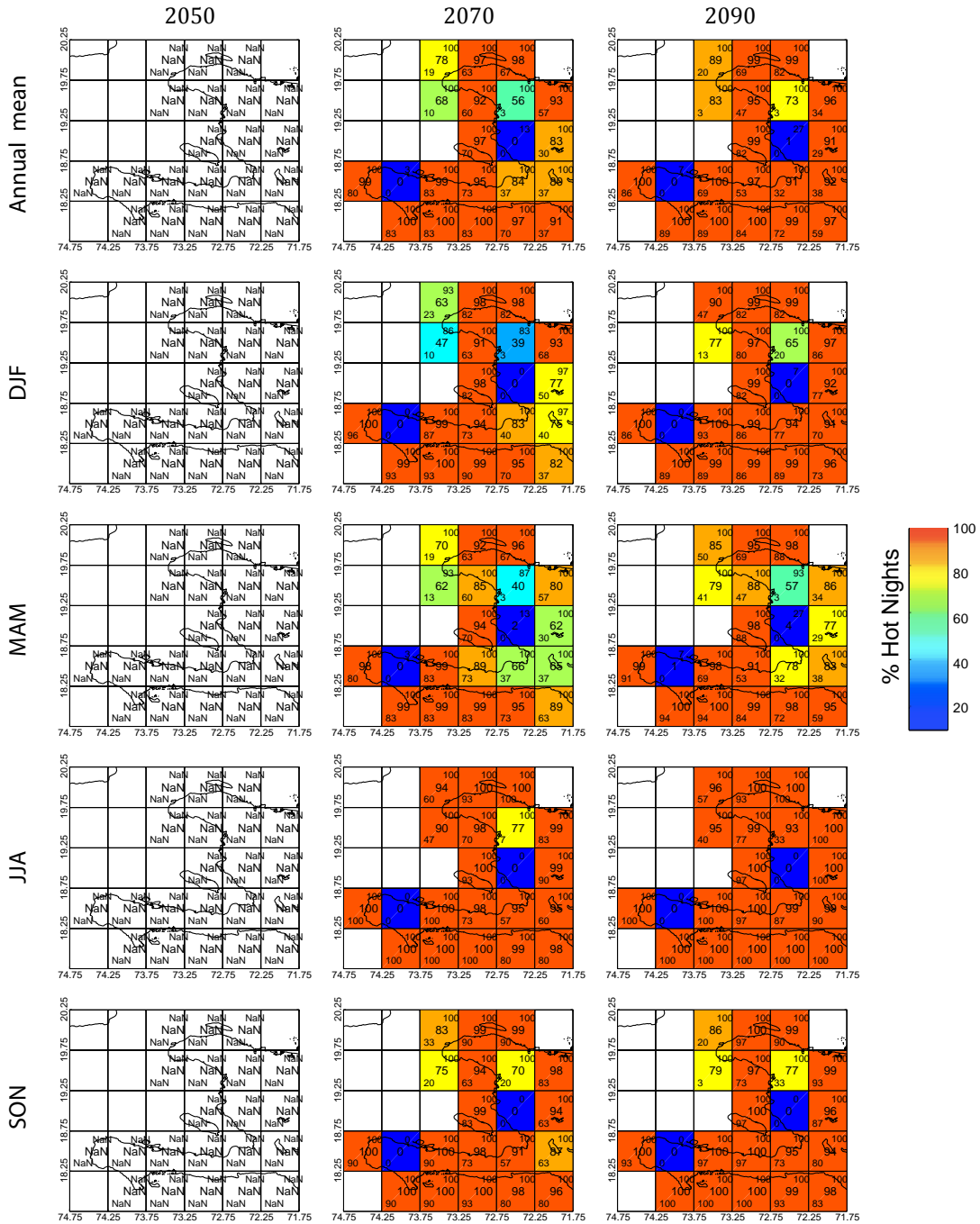


Figure 5.3

Hadley Cold day frequency

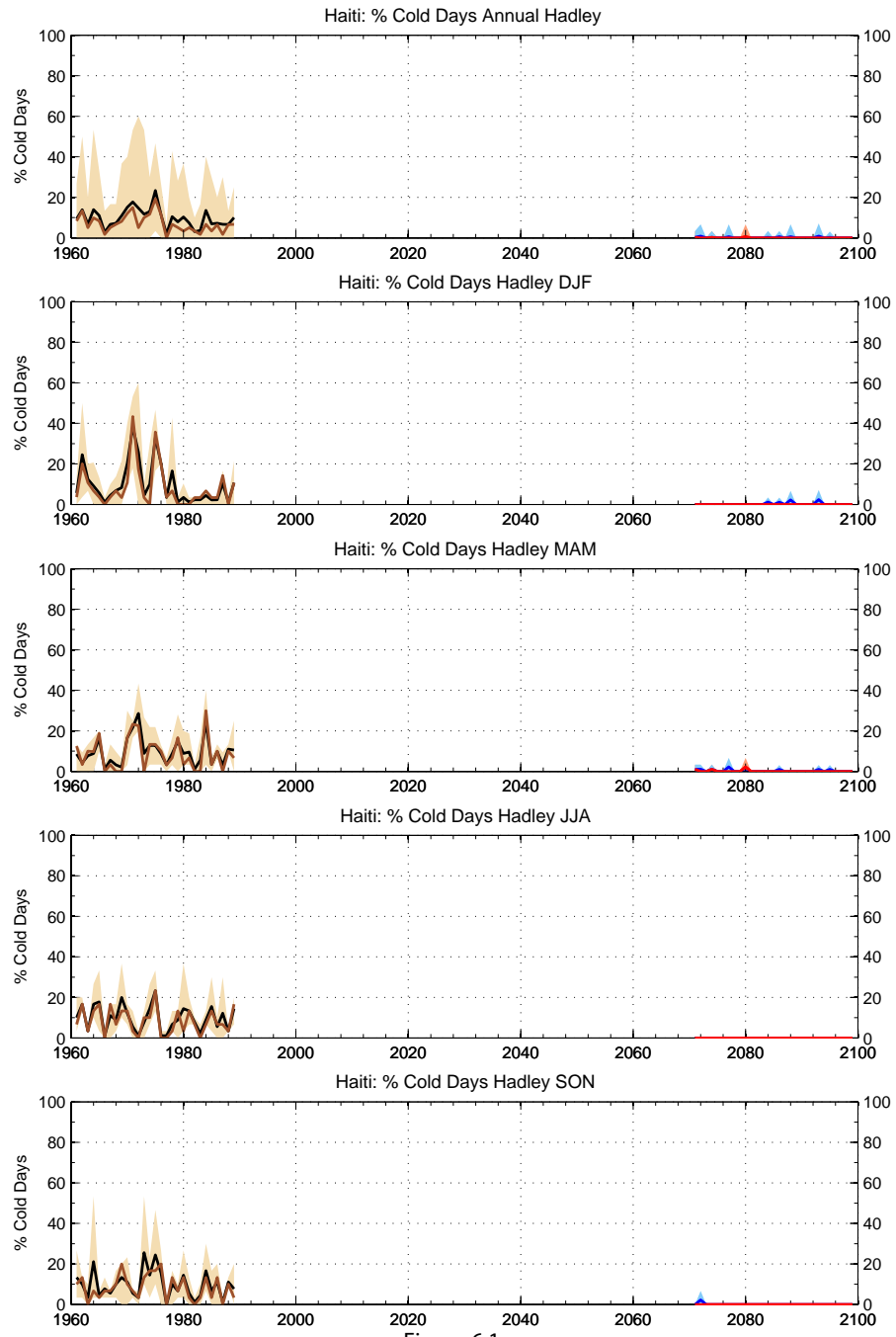


Figure 6.1