

Performance based Climatic zoning

Brazilian case study



Automatically generated by Simzoning

18-Dec-2022

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Chapter 1. Climatic zoning results

1.1. Clustering results

This report presents a performance-based approach for climatic zoning relying on the intensive use of archetypes, building performance simulation, and GIS. The document was automatically generated by a MATLAB-based Climatic Zoning Tool. Further details regarding the principles adopted in this study can be found in (Walsh, Cóstola, & Labaki, 2018)(Walsh, Cóstola, & Labaki, 2019). This chapter contains a graphical representation of climatic zoning results considering a set of zoning numbers defined by the user.

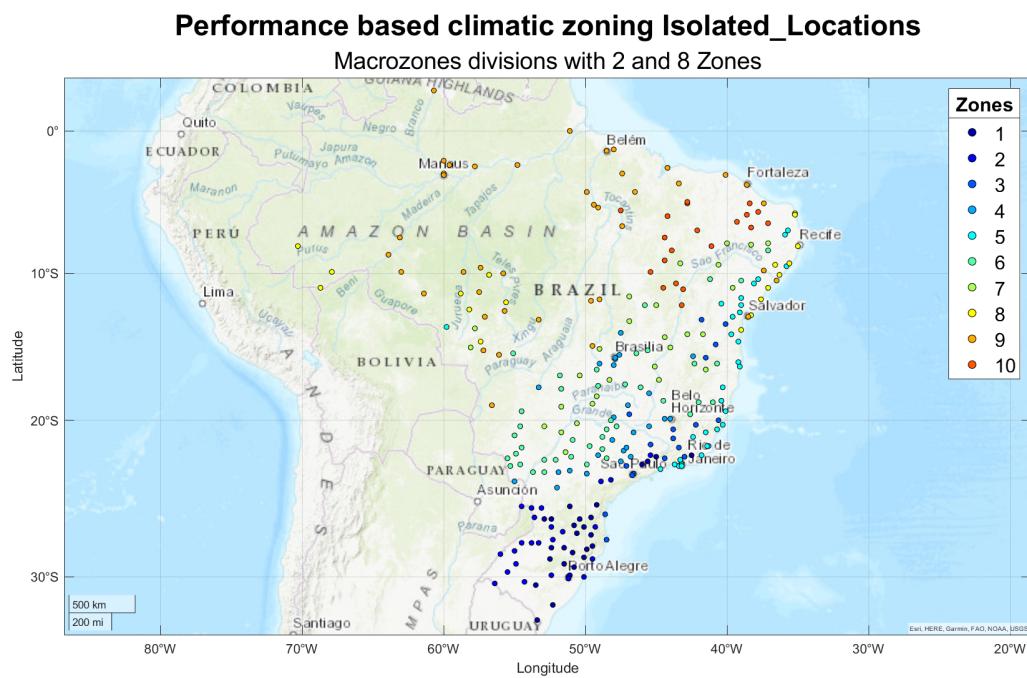


Figure 1.1. Isolated_Locations with Macrozones zoning

Chapter 1. Climatic zoning results

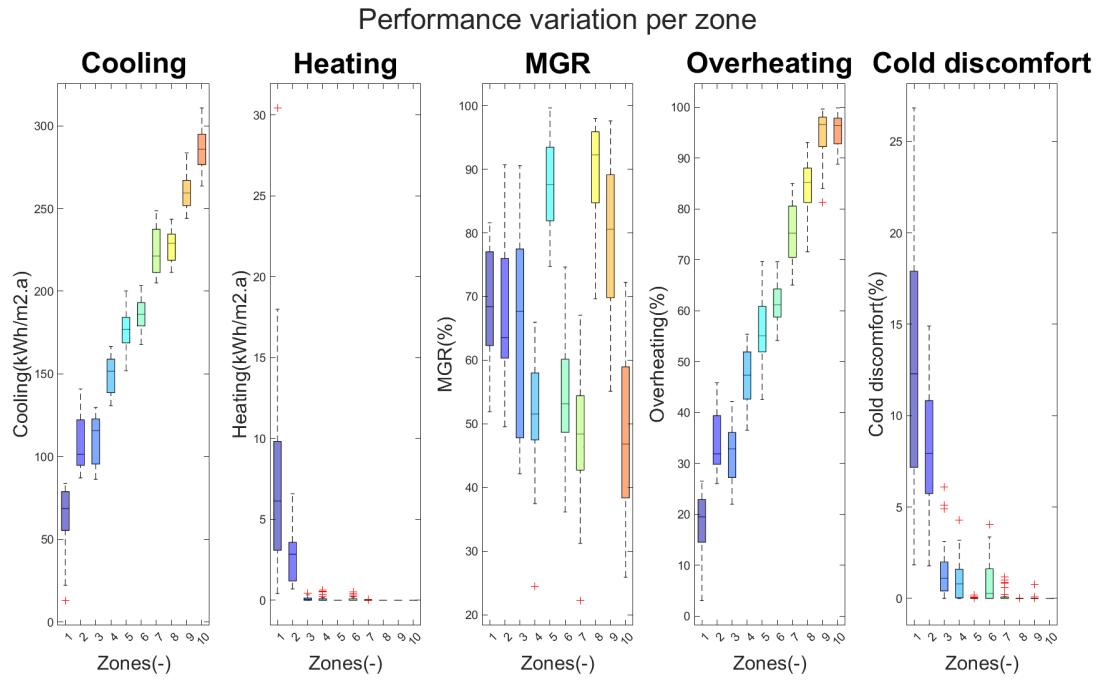


Figure 1.2. Isolated_Locations with Macrozones zoning boxplot

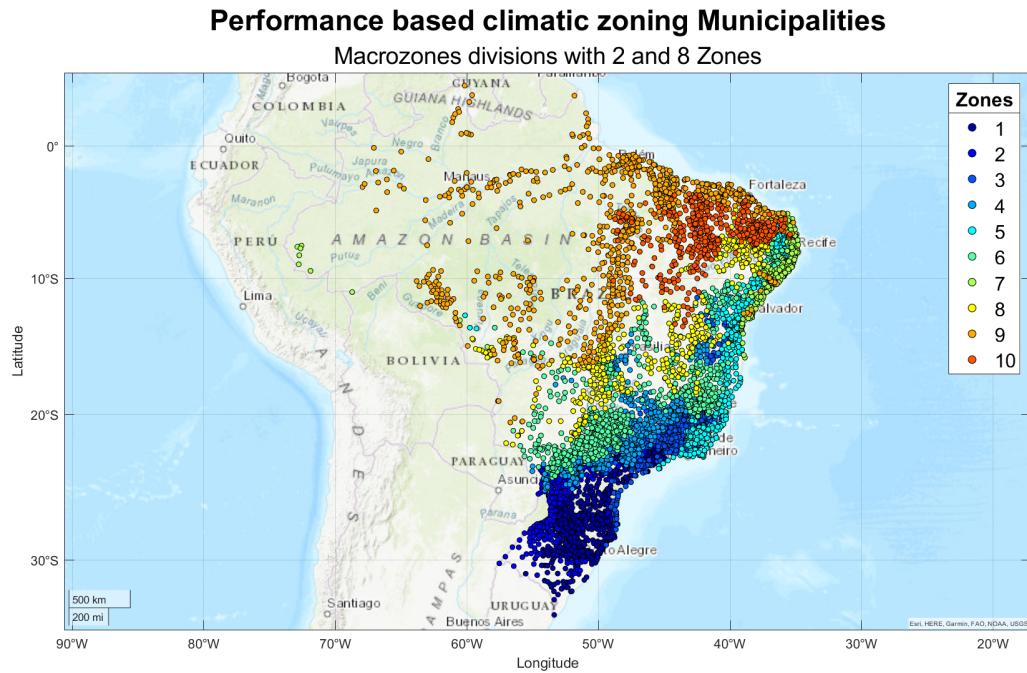


Figure 1.3. Municipalities with Macrozones zoning

Chapter 1. Climatic zoning results

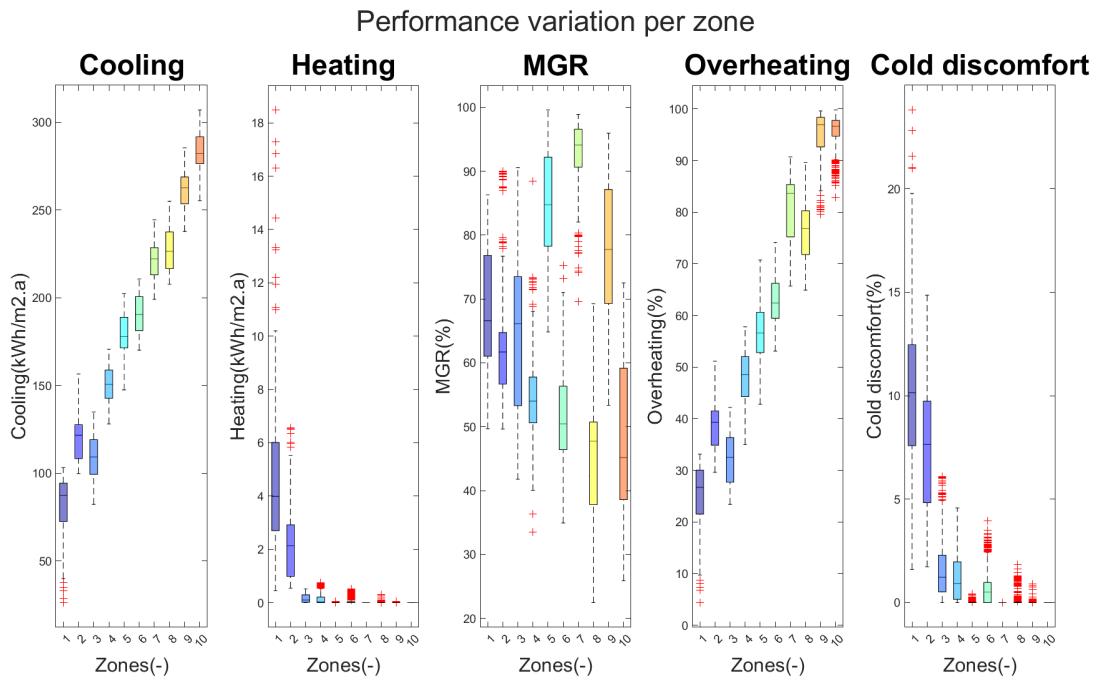


Figure 1.4. Municipalities with Macrozones zoning boxplot

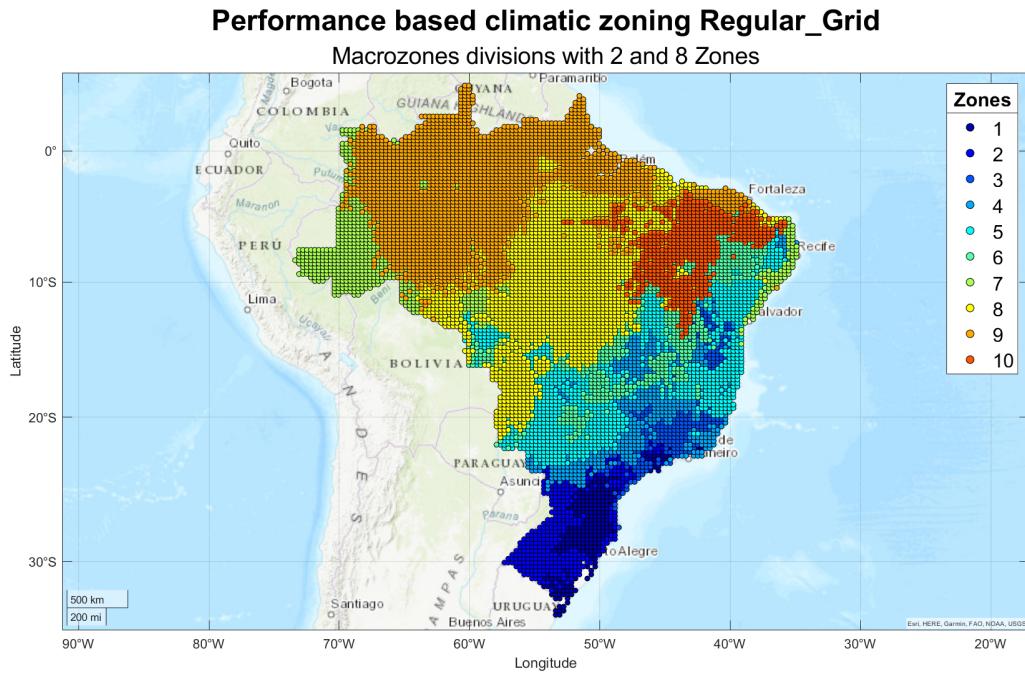


Figure 1.5. Regular_Grid with Macrozones zoning

Chapter 1. Climatic zoning results

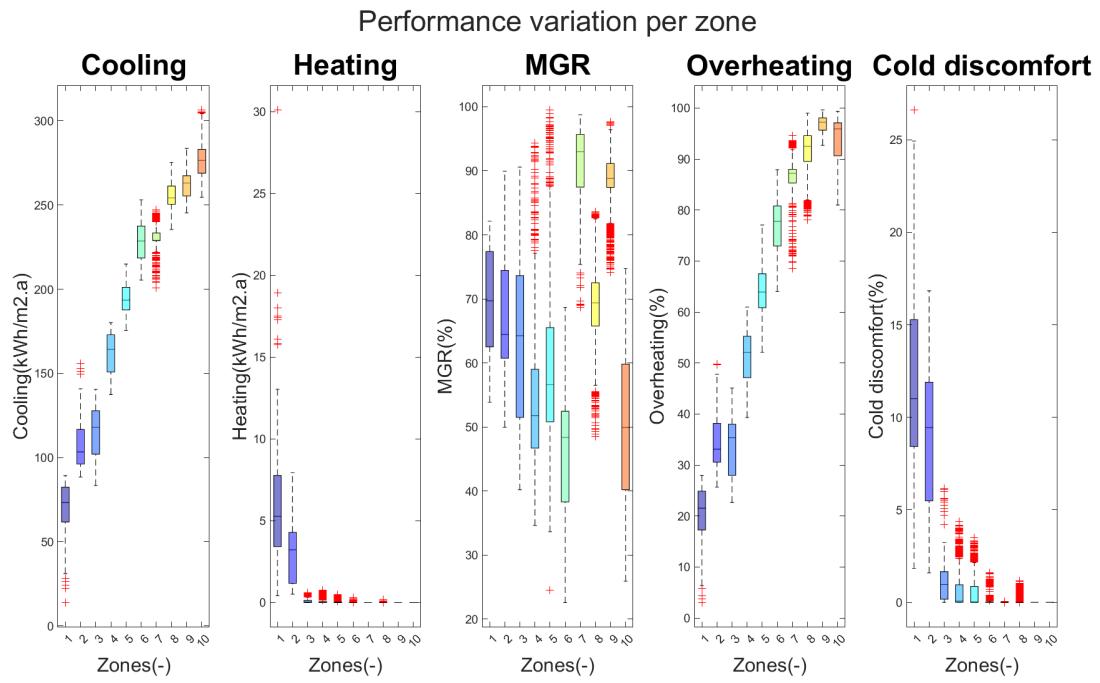


Figure 1.6. Regular_Grid with Macrozones zoning boxplot

Chapter 2. Alternative methods for comparison

2.1. Alternative methods for comparison

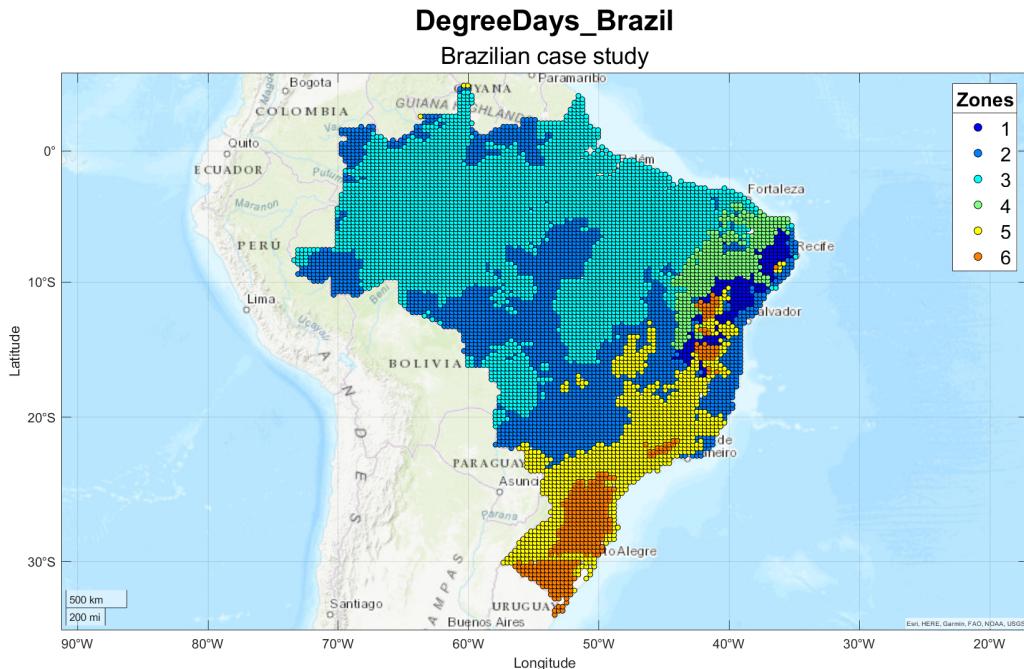


Figure 2.1. DegreeDays_Brazil

Chapter 2. Alternative methods for comparison

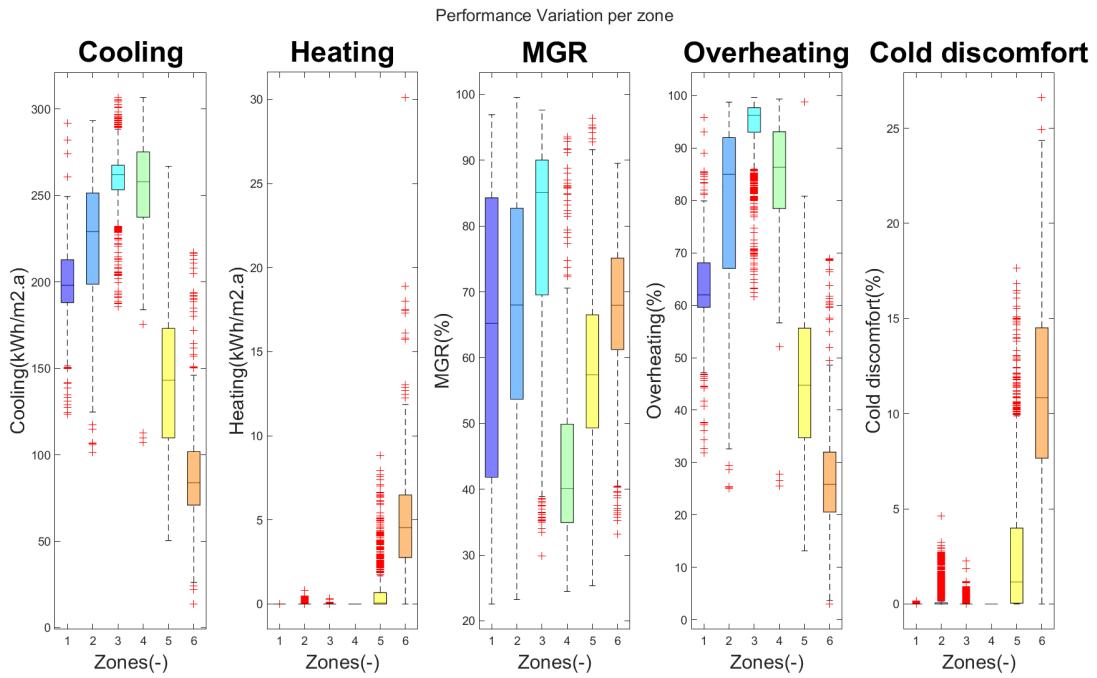


Figure 2.2. DegreeDays_Brazil zoning boxplot

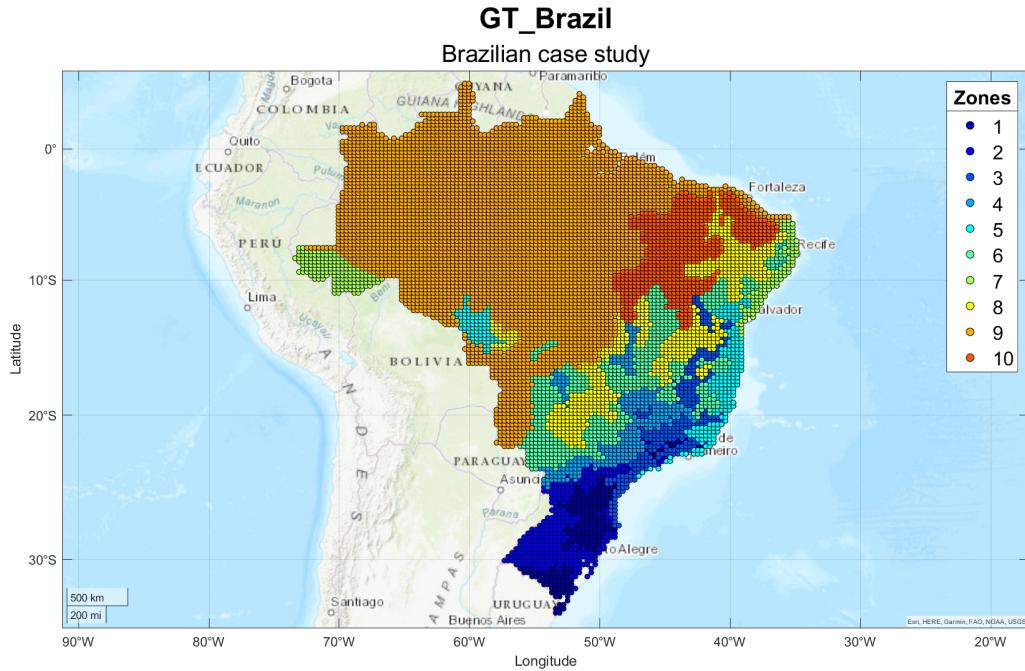


Figure 2.3. GT_Brazil

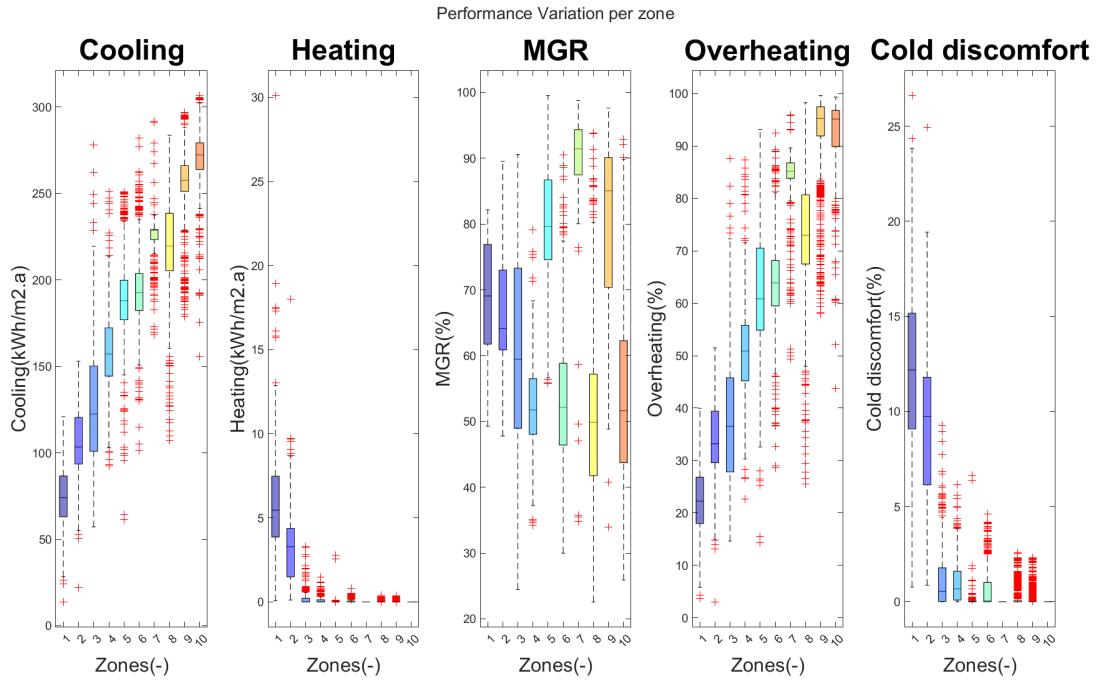


Figure 2.4. GT_Brazil zoning boxplot

Chapter 3. MPMA results

3.1. MPMA results using centroids method

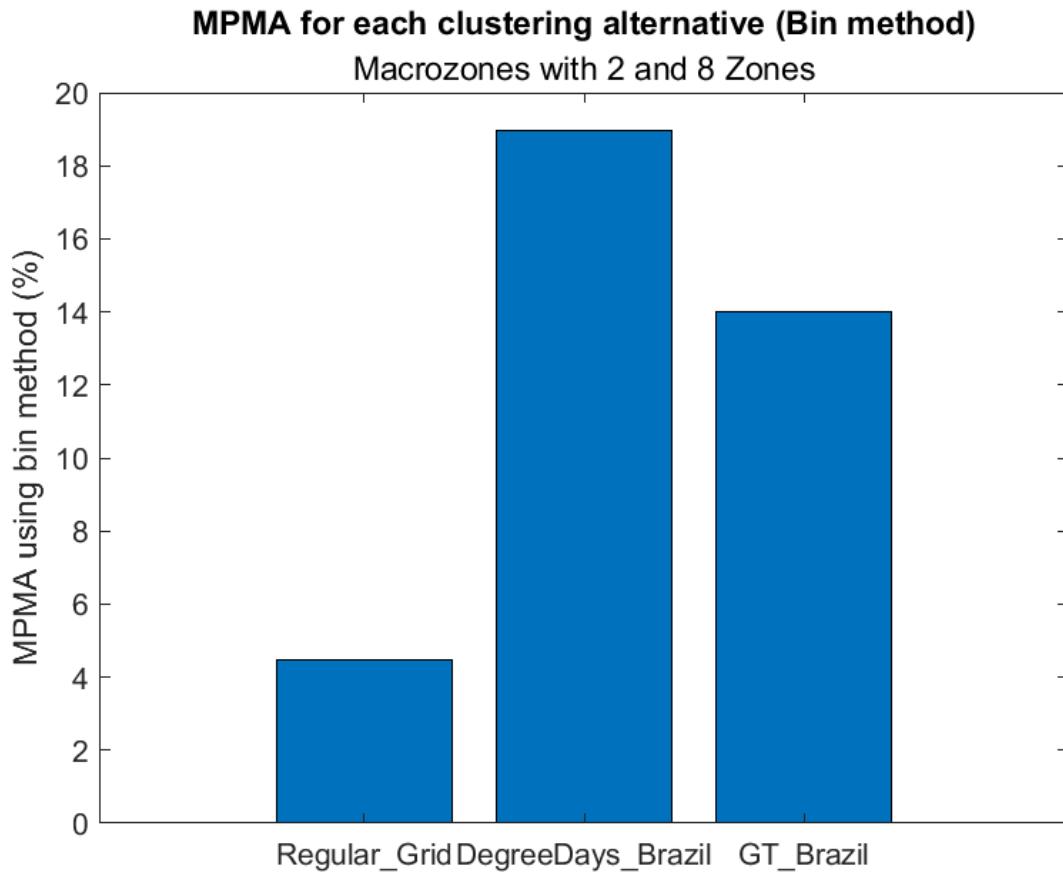


Figure 3.1. MPMA for each clustering alternative Bin method

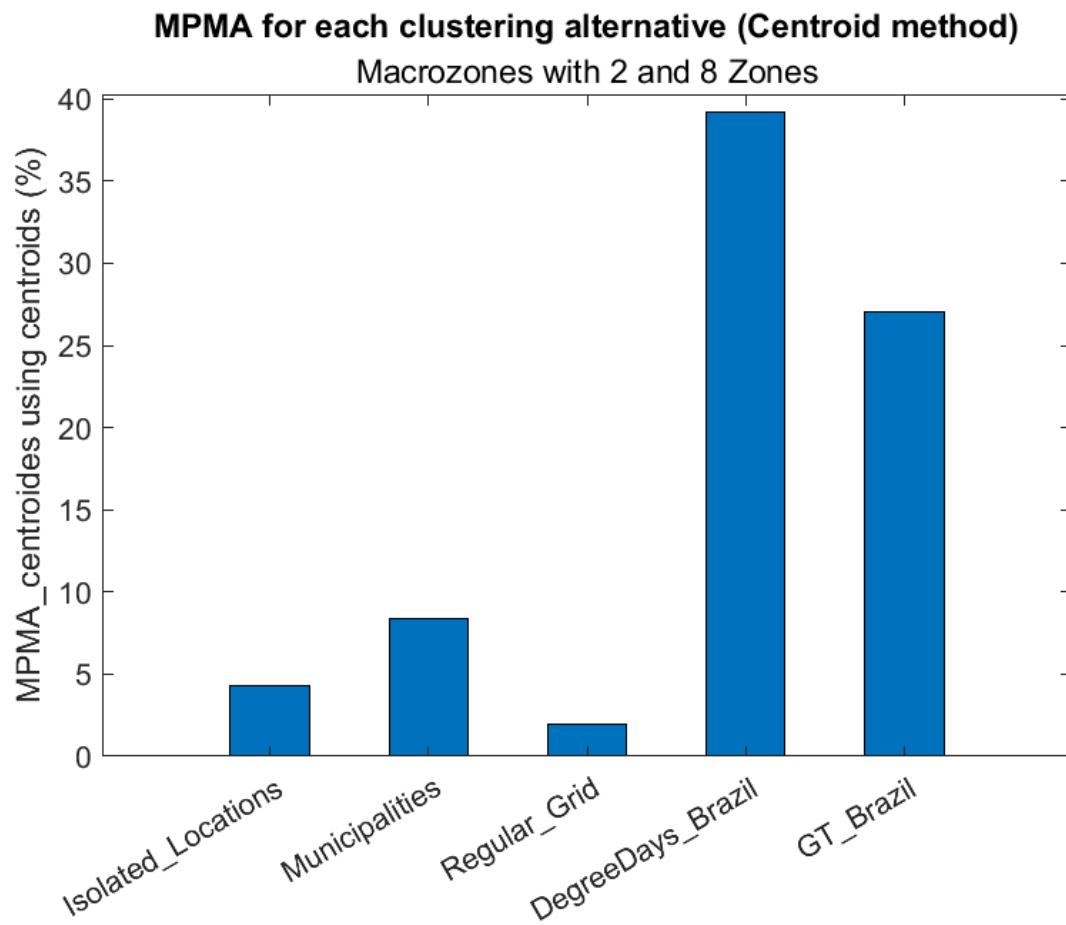


Figure 3.2. MPMA_centroids for each clustering alternative

Chapter 4. Interpolation using Altitude, longitude and latitude

4.1. Grid used for interpolation

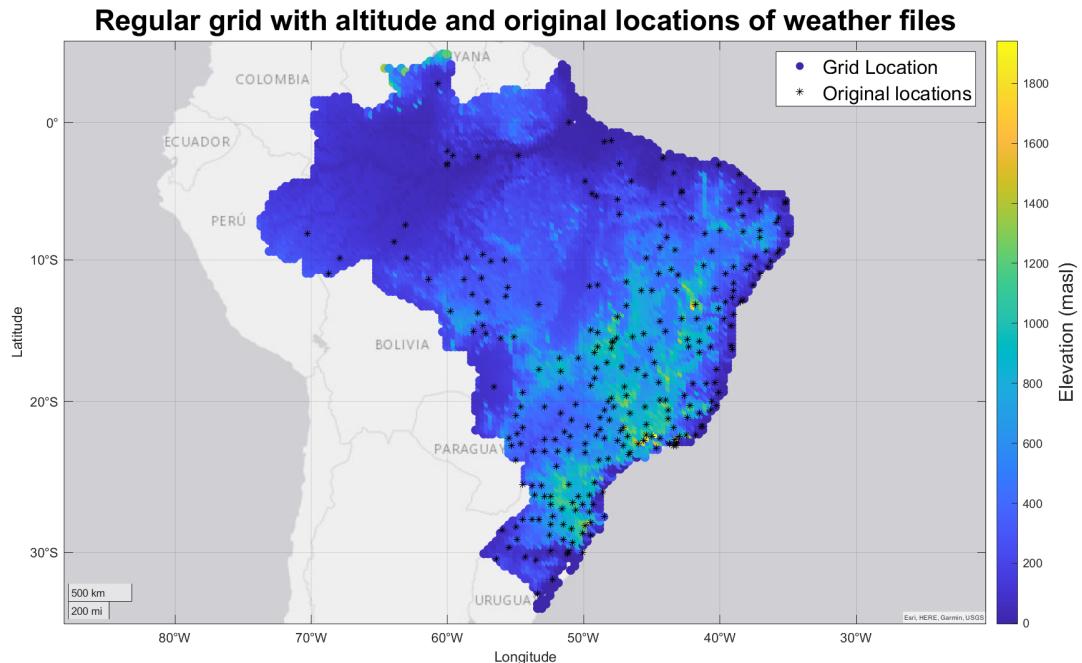


Figure 4.1. Regular grid_elevation

4.2. Interpolated performance maps

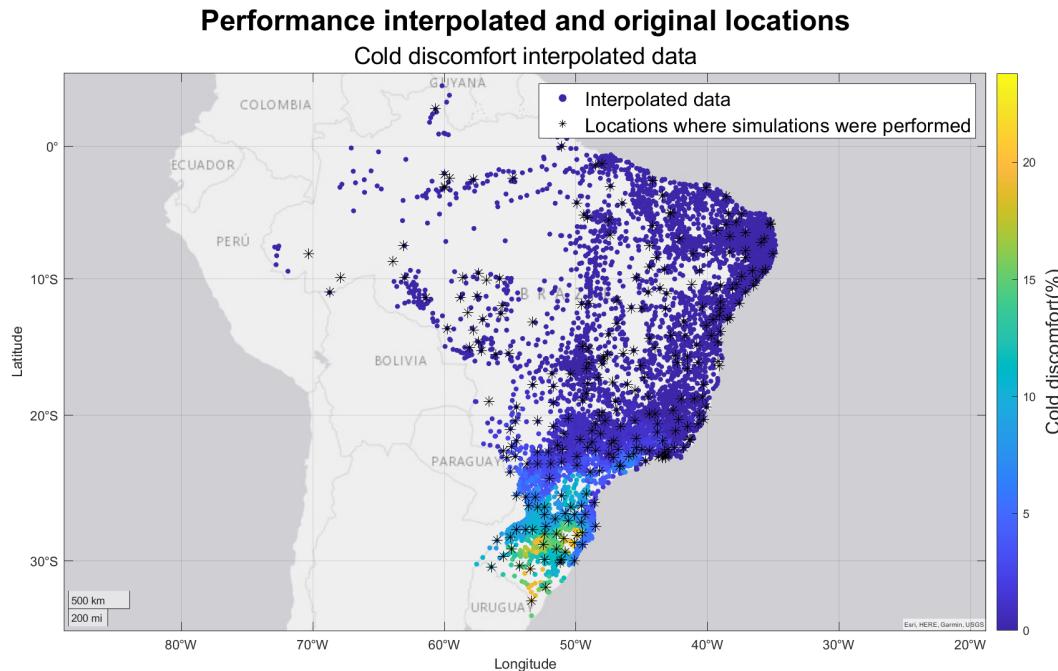


Figure 4.2. Cold discomfort Performance mapMunicipalities

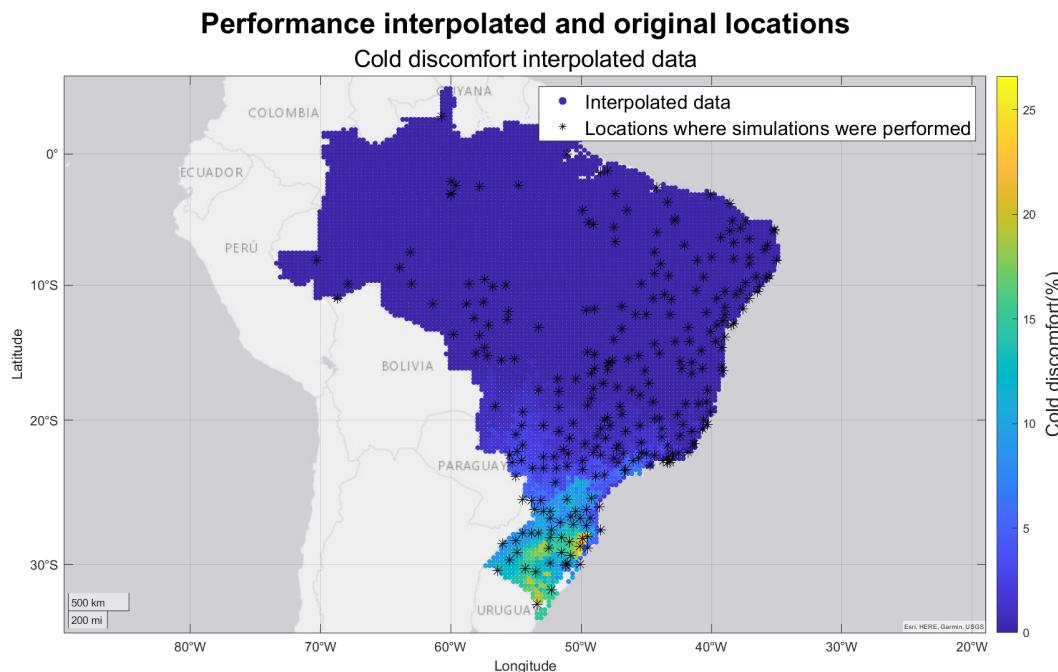


Figure 4.3. Cold discomfort Performance mapRegular_Grid

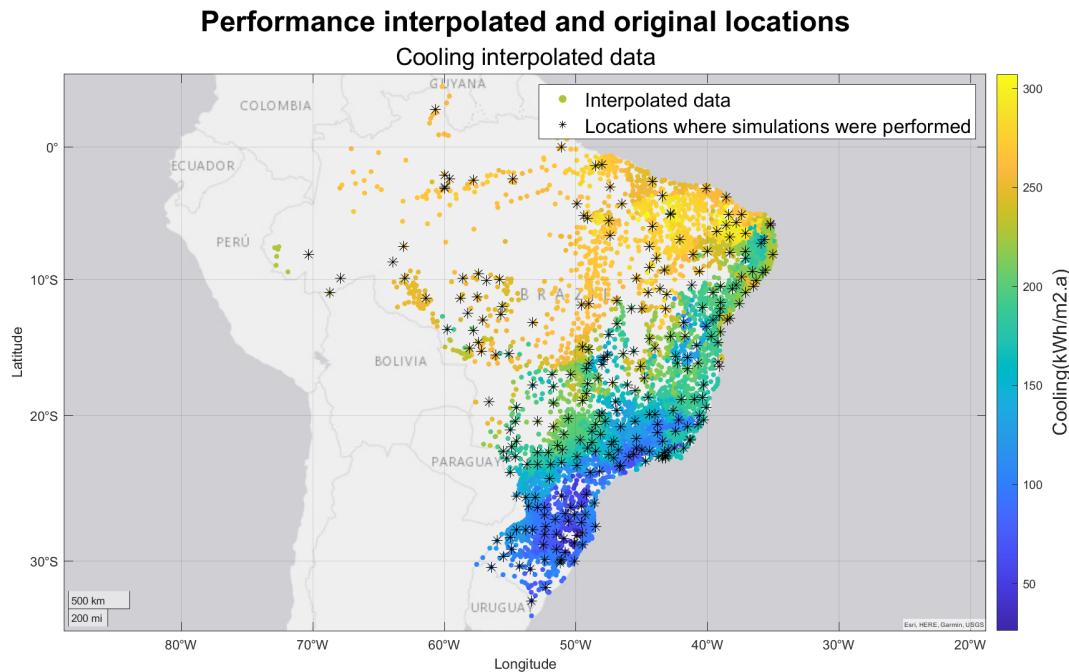


Figure 4.4. Cooling Performance mapMunicipalities

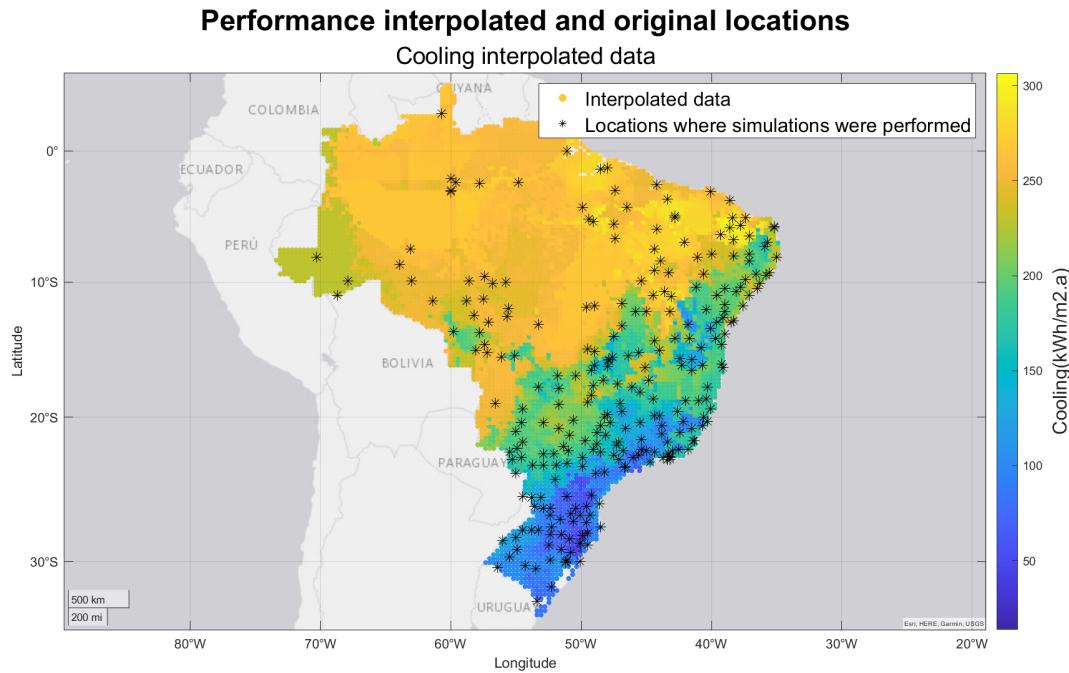


Figure 4.5. Cooling Performance mapRegular_Grid



Figure 4.6. Heating Performance mapMunicipalities



Figure 4.7. Heating Performance mapRegular_Grid

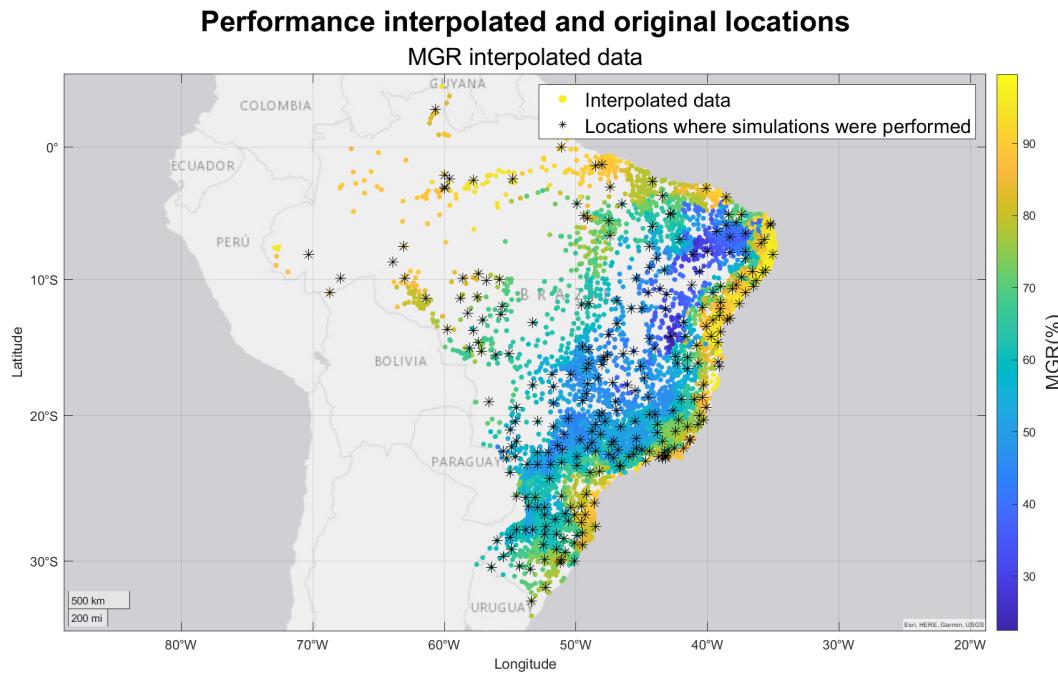


Figure 4.8. MGR Performance mapMunicipalities



Figure 4.9. MGR Performance mapRegular_Grid

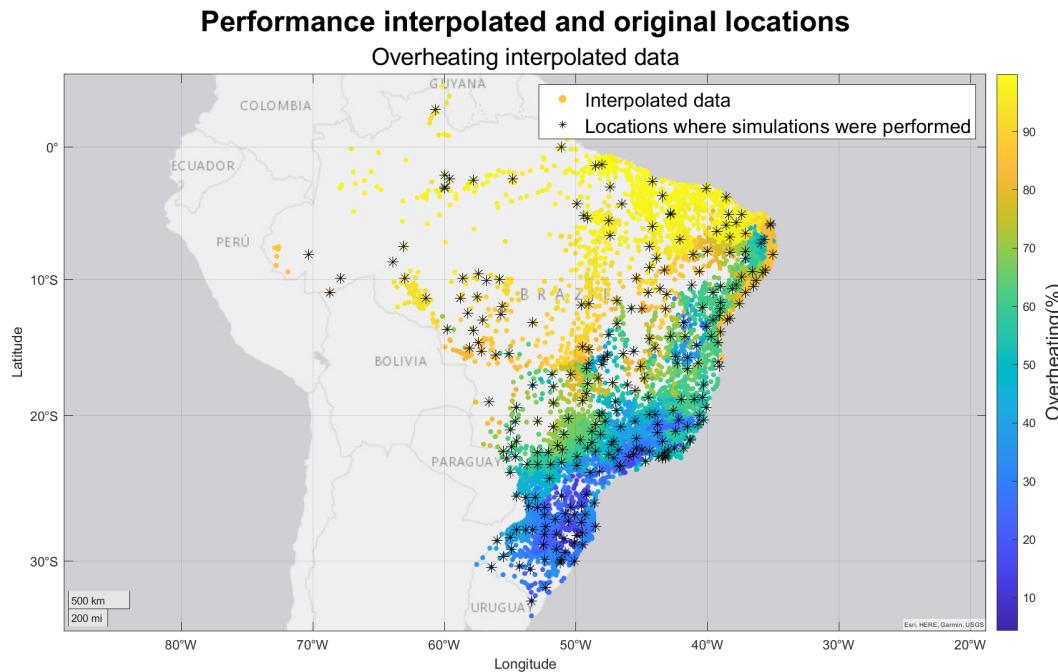


Figure 4.10. Overheating Performance mapMunicipalities

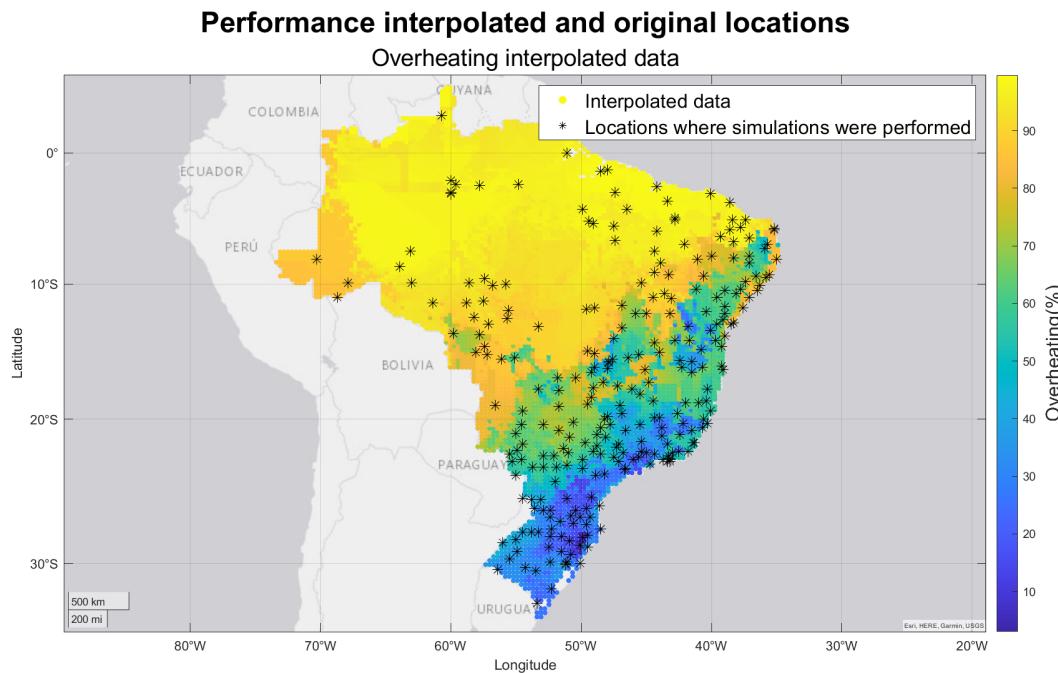


Figure 4.11. Overheating Performance mapRegular_Grid

Chapter 5. Performance maps

5.1. Performance maps for quality control

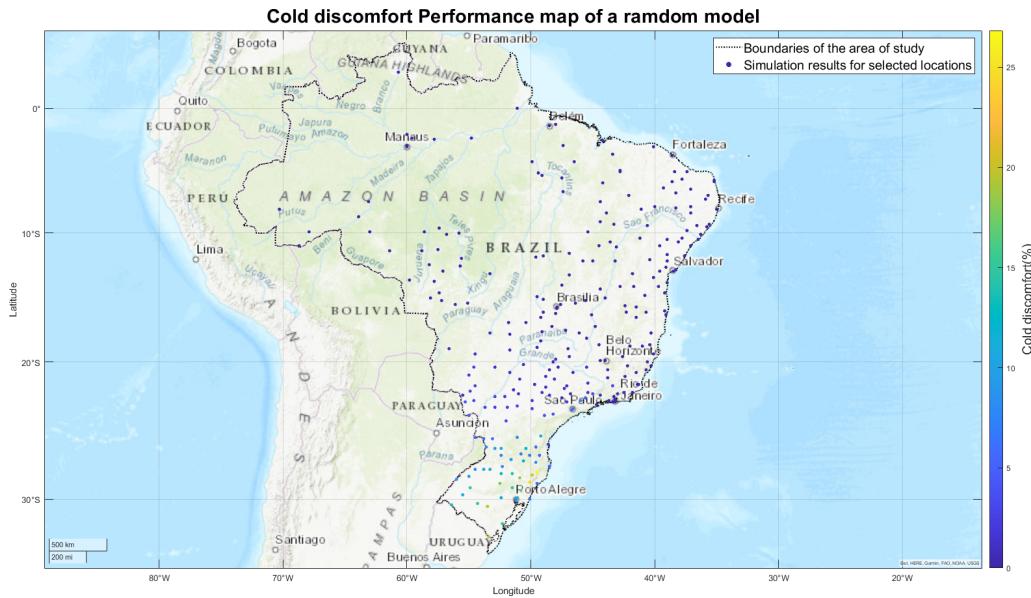


Figure 5.1. Cold discomfort Performance map of a ramdom model

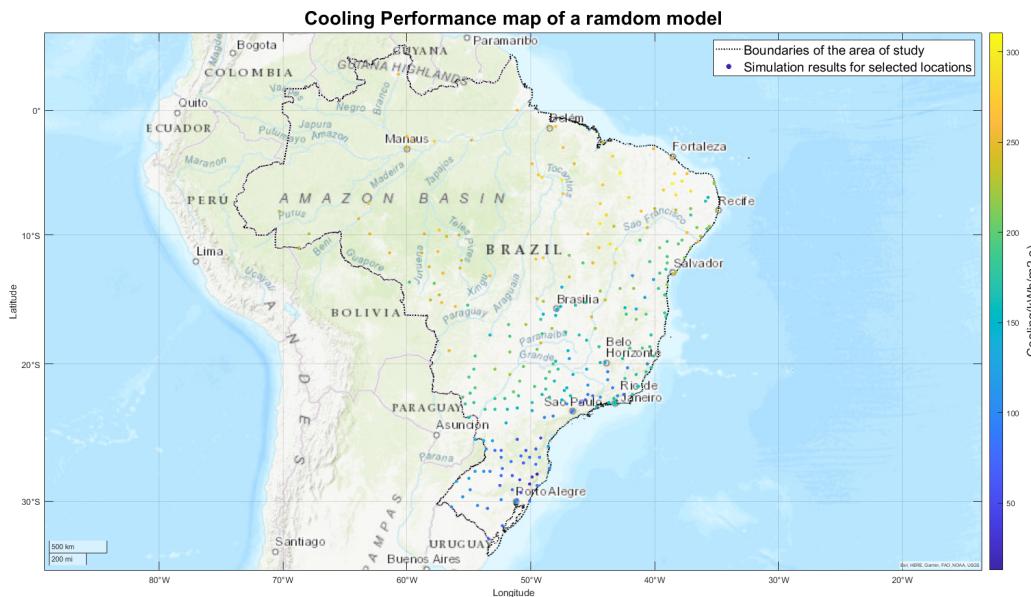


Figure 5.2. Cooling Performance map of a ramdom model

Capítulo 5. Performance maps

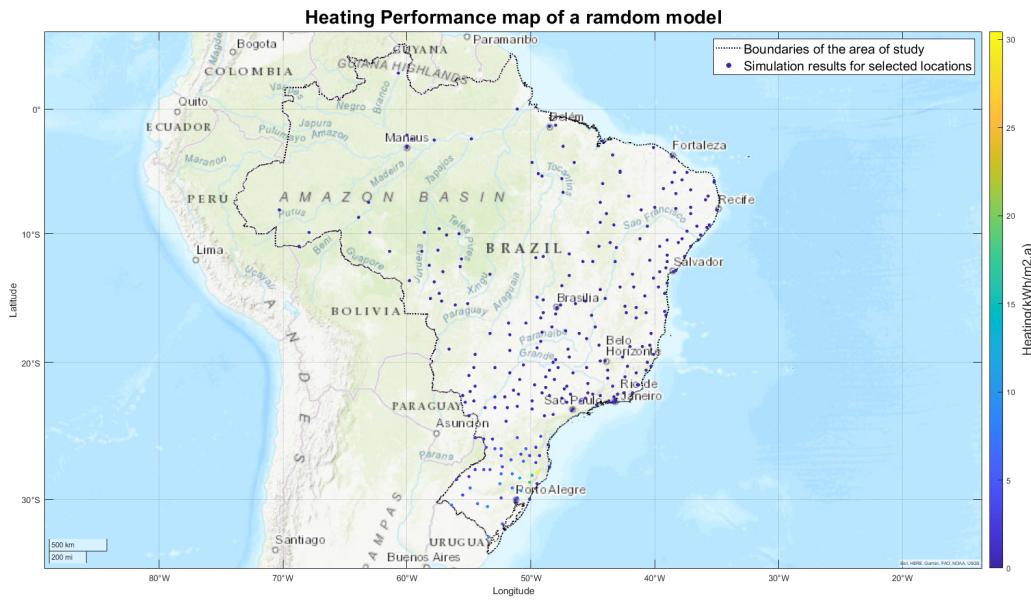


Figure 5.3. Heating Performance map of a ramdom model

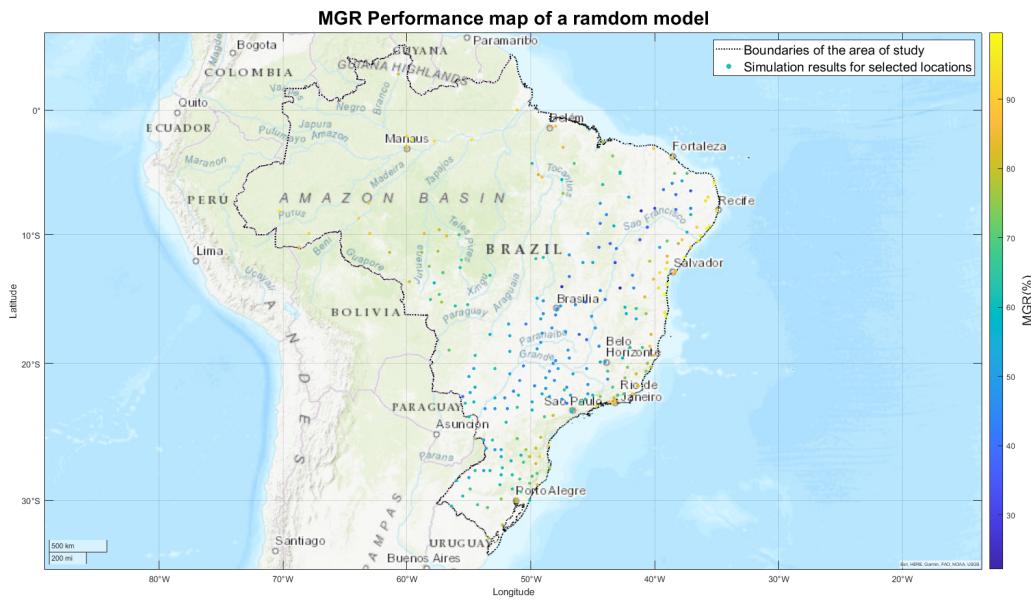


Figure 5.4. MGR Performance map of a ramdom model

Capítulo 5. Performance maps

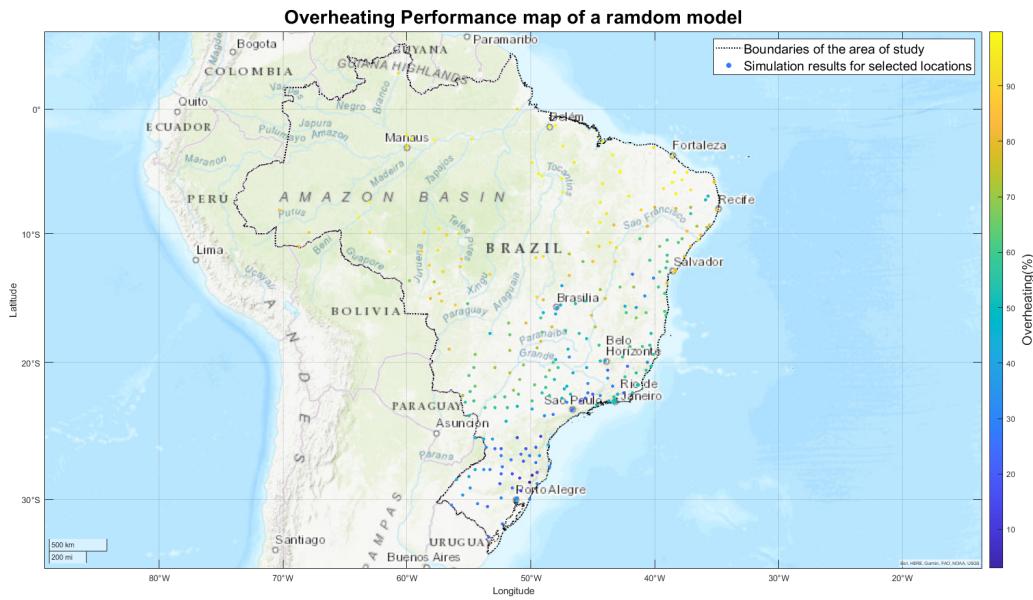


Figure 5.5. Overheating Performance map of a ramdom model

Chapter 6. Synthesis of climatic boundary conditions

6.1. Weather data used in this study

Weather data summary:

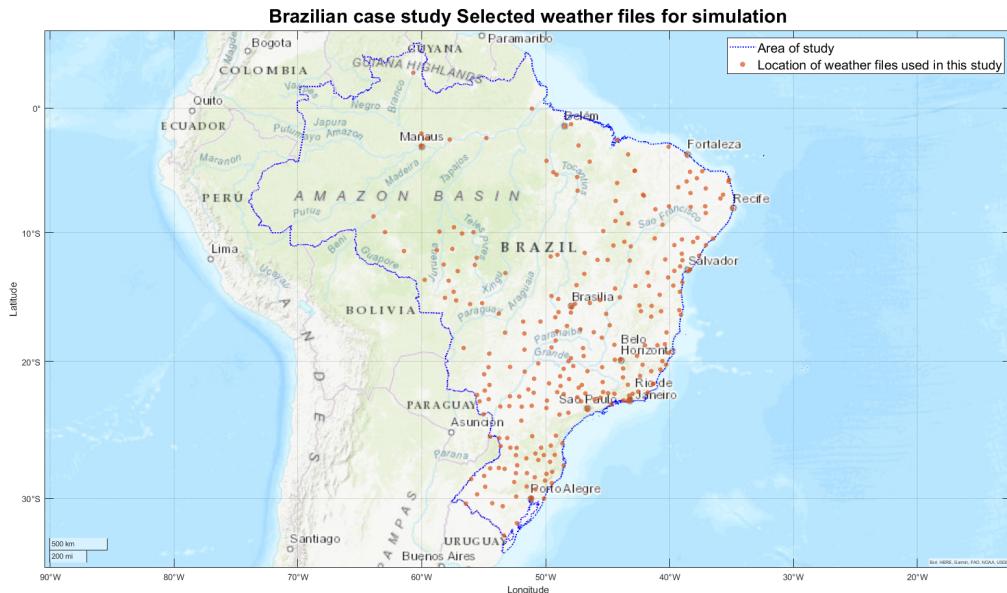


Figure 6.1. Weather data included in this study

This table contains a list of weather files used in this study. Data is displayed in alphabetical order

ID	ListofEPW	LAT	LON
1	Epitaciolandia AC BRA SRC-TMYx WMO#=866200	-11.000	-68.700
2	Feijo.AP AC BRA SRC-TMYx WMO#=819240	-8.100	-70.300
3	Rio.Branco-Medici.Intl.AP AC BRA SRC-TMYx WMO#=829170	-9.900	-67.900
4	Coruripe AL BRA SRC-TMYx WMO#=866190	-10.100	-36.300
5	Maceio-Palmares.Intl.AP AL BRA SRC-TMYx WMO#=829930	-9.500	-35.800
6	Palmeira.dos.Indios AL BRA SRC-TMYx WMO#=819950	-9.400	-36.600
7	Pao.de.Acucar AL BRA SRC-TMYx WMO#=819940	-9.800	-37.400
8	Sao.Luis.do.Quitunde AL BRA SRC-TMYx WMO#=819970	-9.300	-35.600
9	Humaita AM BRA SRC-TMYx WMO#=818900	-7.500	-63.100
10	Manaus-Gomes.Intl.AP AM BRA SRC-TMYx WMO#=821110	-3.000	-60.000
11	Manaus AM BRA SRC-TMYx WMO#=817300	-3.100	-60.000
12	Presidente.Figueiredo AM BRA SRC-TMYx WMO#=816990	-2.100	-60.000
13	Rio.Uruba AM BRA SRC-TMYx WMO#=817000	-2.400	-59.600
14	Urucara AM BRA SRC-TMYx WMO#=817020	-2.500	-57.800
15	Macapa AP BRA SRC-TMYx WMO#=820980	-0.000	-51.100
16	Amargosa BA BRA SRC-TMYx WMO#=866750	-13.000	-39.600
17	Barra BA BRA SRC-TMYx WMO#=866340	-11.100	-43.100
18	Barreiras BA BRA SRC-TMYx WMO#=866520	-12.200	-45.000
19	Belmonte BA BRA SRC-TMYx WMO#=867440	-16.100	-39.200
20	Brumado BA BRA SRC-TMYx WMO#=866960	-14.200	-41.700
21	Buritirama BA BRA SRC-TMYx WMO#=866090	-10.700	-43.600

Capítulo 6. Synthesis of climatic boundary conditions

ID	ListofEPW	LAT	LON
22	Conde BA BRA SRC-TMYx WMO#=866390	-11.800	-37.600
23	Cruz.das.Almas BA BRA SRC-TMYx WMO#=866570	-12.700	-39.100
24	Delfino BA BRA SRC-TMYx WMO#=866100	-10.400	-41.200
25	Euclides.da.Cunha BA BRA SRC-TMYx WMO#=866130	-10.500	-39.000
26	Feira.de.Santana BA BRA SRC-TMYx WMO#=866580	-12.200	-39.000
27	Guanambi BA BRA SRC-TMYx WMO#=866940	-14.200	-42.800
28	Ibotirama BA BRA SRC-TMYx WMO#=866530	-12.200	-43.200
29	Ilheus BA BRA SRC-TMYx WMO#=866990	-14.700	-39.200
30	Ipiua BA BRA SRC-TMYx WMO#=866980	-14.200	-39.700
31	Itirucu BA BRA SRC-TMYx WMO#=866740	-13.500	-40.100
32	Luis.Eduardo.Magalhaes BA BRA SRC-TMYx WMO#=866510	-12.200	-45.800
33	Macajuba BA BRA SRC-TMYx WMO#=866550	-12.100	-40.400
34	Marau BA BRA SRC-TMYx WMO#=866770	-13.900	-39.000
35	Piata BA BRA SRC-TMYx WMO#=866730	-13.200	-41.800
36	Porto.Seguro.Intl.AP BA BRA SRC-TMYx WMO#=834600	-16.400	-39.100
37	Queimadas BA BRA SRC-TMYx WMO#=866120	-11.000	-39.600
38	Salvador-Magalhaes.Intl.AP BA BRA SRC-TMYx WMO#=832480	-12.900	-38.300
39	Salvador BA BRA SRC-TMYx WMO#=866780	-13.000	-38.500
40	Santa.Rita.de.Cassia BA BRA SRC-TMYx WMO#=866330	-11.000	-44.500
41	Serrinha BA BRA SRC-TMYx WMO#=866370	-11.700	-39.000
42	Vitoria.da.Conquista BA BRA SRC-TMYx WMO#=866970	-14.900	-40.800
43	Acarau CE BRA SRC-TMYx WMO#=817550	-3.100	-40.100
44	Fortaleza CE BRA SRC-TMYx WMO#=817580	-3.800	-38.600
45	Iguatu CE BRA SRC-TMYx WMO#=818730	-6.400	-39.300
46	Jaguaribe CE BRA SRC-TMYx WMO#=818330	-5.900	-38.600
47	Aguas.Emendadas DF BRA SRC-TMYx WMO#=867160	-15.600	-47.600
48	Brasilia-Kubitschek.Intl.AP DF BRA SRC-TMYx WMO#=833780	-15.900	-47.900
49	Brasilia DF BRA SRC-TMYx WMO#=867150	-15.800	-47.900
50	Alegre ES BRA SRC-TMYx WMO#=868280	-20.800	-41.500
51	Alfredo.Chaves ES BRA SRC-TMYx WMO#=868290	-20.600	-40.700
52	Linhares.AP ES BRA SRC-TMYx WMO#=868050	-19.400	-40.100
53	Nova.Venecia ES BRA SRC-TMYx WMO#=867850	-18.700	-40.400
54	Santa.Tereza ES BRA SRC-TMYx WMO#=868040	-20.000	-40.600
55	Vitoria-Aguiar.Salles.AP ES BRA SRC-TMYx WMO#=836490	-20.300	-40.300
56	Alto.Paraiso.de.Goias GO BRA SRC-TMYx WMO#=866910	-14.100	-47.500
57	Anapolis.AB GO BRA SRC-TMYx WMO#=834190	-16.200	-49.000
58	Caiponia GO BRA SRC-TMYx WMO#=867300	-17.000	-51.800
59	Goianesia GO BRA SRC-TMYx WMO#=867130	-15.200	-49.000
60	Goiania-Santa.Genoveva.AP GO BRA SRC-TMYx WMO#=834240	-16.600	-49.200
61	Itapaci GO BRA SRC-TMYx WMO#=866890	-15.000	-49.500
62	Itumbiara GO BRA SRC-TMYx WMO#=867740	-18.400	-49.200
63	Jatai GO BRA SRC-TMYx WMO#=867520	-17.900	-51.700
64	Luziania GO BRA SRC-TMYx WMO#=867360	-16.300	-48.000
65	Monte.Alegre.de.Goias GO BRA SRC-TMYx WMO#=866700	-13.300	-46.900
66	Morrinhos GO BRA SRC-TMYx WMO#=867550	-17.700	-49.100
67	Paraua GO BRA SRC-TMYx WMO#=867320	-17.000	-50.400
68	Pires.do.Rio GO BRA SRC-TMYx WMO#=867560	-17.300	-48.300
69	Balsas MA BRA SRC-TMYx WMO#=819030	-7.000	-42.100
70	Buriticupu MA BRA SRC-TMYx WMO#=817880	-4.300	-46.500
71	Chapadinha MA BRA SRC-TMYx WMO#=817490	-3.700	-43.400
72	Colinas MA BRA SRC-TMYx WMO#=818660	-6.000	-44.200
73	Estreito MA BRA SRC-TMYx WMO#=818630	-6.700	-47.400
74	Imperatriz MA BRA SRC-TMYx WMO#=818220	-5.600	-47.500
75	Sao.Luis-Machado.Intl.AP MA BRA SRC-TMYx WMO#=822810	-2.600	-44.200
76	Aguas.Vermelhas MG BRA SRC-TMYx WMO#=867220	-15.800	-41.500
77	Almenara MG BRA SRC-TMYx WMO#=867430	-16.200	-40.700
78	Alta.Floresta MG BRA SRC-TMYx WMO#=819770	-10.100	-56.800
79	Araxa MG BRA SRC-TMYx WMO#=867960	-19.600	-46.900
80	Barbacena MG BRA SRC-TMYx WMO#=868500	-21.200	-43.800
81	Belo.Horizonte-Pampulha-Andrade.AP MG BRA SRC-TMYx WMO#=835830	-19.900	-44.000
82	Belo.Horizonte-Pampulha MG BRA SRC-TMYx WMO#=868000	-19.900	-44.000
83	Buritis MG BRA SRC-TMYx WMO#=867180	-15.500	-46.400
84	Chapada.Gaucha MG BRA SRC-TMYx WMO#=867190	-15.300	-45.600

Capítulo 6. Synthesis of climatic boundary conditions

ID	ListofEPW	LAT	LON
85	Conceicao.das.Alagoas MG BRA SRC-TMYx WMO#=867940	-20.000	-48.200
86	Curvelo.AP MG BRA SRC-TMYx WMO#=867800	-18.700	-44.500
87	Florestal MG BRA SRC-TMYx WMO#=867980	-19.900	-44.400
88	Formiga MG BRA SRC-TMYx WMO#=868200	-20.400	-45.500
89	Governador.Valadares MG BRA SRC-TMYx WMO#=867830	-18.800	-42.000
90	Guarda.Mor MG BRA SRC-TMYx WMO#=867570	-17.600	-47.200
91	Itaobim MG BRA SRC-TMYx WMO#=867420	-16.600	-41.500
92	Ituiutaba MG BRA SRC-TMYx WMO#=867750	-18.900	-49.500
93	Joao.Pinheiro.AP MG BRA SRC-TMYx WMO#=867580	-17.800	-46.100
94	Juiz.de.Fora MG BRA SRC-TMYx WMO#=868510	-21.800	-43.400
95	Manhuacu MG BRA SRC-TMYx WMO#=868250	-20.300	-42.200
96	Mantena MG BRA SRC-TMYx WMO#=867840	-18.800	-41.000
97	Maria.da.Fe MG BRA SRC-TMYx WMO#=868710	-22.300	-45.400
98	Mocambinho MG BRA SRC-TMYx WMO#=867200	-15.100	-44.000
99	Montalvania MG BRA SRC-TMYx WMO#=866930	-14.400	-44.400
100	Monte.Verde MG BRA SRC-TMYx WMO#=868700	-22.900	-46.000
101	Muria MG BRA SRC-TMYx WMO#=868520	-21.100	-42.400
102	Ouro.Branco MG BRA SRC-TMYx WMO#=868230	-20.600	-43.800
103	Passa.Quatro MG BRA SRC-TMYx WMO#=868730	-22.400	-45.000
104	Passos MG BRA SRC-TMYx WMO#=868190	-20.800	-46.600
105	Patrocino MG BRA SRC-TMYx WMO#=867780	-19.000	-47.000
106	Pirapora MG BRA SRC-TMYx WMO#=867590	-17.300	-44.800
107	Rio.Pardo.de.Minas MG BRA SRC-TMYx WMO#=867210	-15.700	-42.400
108	Salinas MG BRA SRC-TMYx WMO#=867410	-16.200	-42.300
109	Sao.Romao MG BRA SRC-TMYx WMO#=867390	-16.400	-45.100
110	Serra.dos.Aimores MG BRA SRC-TMYx WMO#=867630	-17.800	-40.300
111	Timoteo MG BRA SRC-TMYx WMO#=868010	-19.600	-42.600
112	Tres.Marias MG BRA SRC-TMYx WMO#=867790	-18.200	-45.500
113	Uberaba-Almeida.Franco.AP MG BRA SRC-TMYx WMO#=835760	-19.800	-48.000
114	Varginha MG BRA SRC-TMYx WMO#=868480	-21.600	-45.400
115	Agua.Clara MS BRA SRC-TMYx WMO#=868120	-20.400	-52.900
116	Amambai MS BRA SRC-TMYx WMO#=868940	-23.000	-55.300
117	Campo.Grande MS BRA SRC-TMYx WMO#=868100	-20.400	-54.600
118	Cassilandia MS BRA SRC-TMYx WMO#=867910	-19.100	-51.700
119	Dourados.AP MS BRA SRC-TMYx WMO#=868580	-22.200	-54.900
120	Juti MS BRA SRC-TMYx WMO#=868590	-22.900	-54.600
121	Nhumirim MS BRA SRC-TMYx WMO#=867680	-19.000	-56.600
122	Ponta.Pora MS BRA SRC-TMYx WMO#=868570	-22.500	-55.500
123	Rio.Brilhante MS BRA SRC-TMYx WMO#=868360	-21.800	-54.500
124	Sao.Gabriel.do.Oeste MS BRA SRC-TMYx WMO#=867890	-19.400	-54.500
125	Sete.Quedas MS BRA SRC-TMYx WMO#=868950	-24.000	-55.000
126	Sidrolandia MS BRA SRC-TMYx WMO#=868090	-21.000	-55.000
127	Tres.Lagoas MS BRA SRC-TMYx WMO#=868130	-20.800	-51.700
128	Alto.Taquari MT BRA SRC-TMYx WMO#=867500	-17.800	-53.300
129	Apiaças MT BRA SRC-TMYx WMO#=819760	-9.600	-57.400
130	Campo.Novo.dos.Parecis MT BRA SRC-TMYx WMO#=866620	-13.800	-57.800
131	Campo.Verde MT BRA SRC-TMYx WMO#=867070	-15.500	-55.100
132	Carlinda MT BRA SRC-TMYx WMO#=819780	-10.000	-55.800
133	Comodoro MT BRA SRC-TMYx WMO#=866610	-13.700	-59.800
134	Cotriguacu MT BRA SRC-TMYx WMO#=819750	-9.900	-58.600
135	Cuiaba MT BRA SRC-TMYx WMO#=867050	-15.600	-56.100
136	Gaucha.do.Norte MT BRA SRC-TMYx WMO#=866660	-13.200	-53.300
137	Juara MT BRA SRC-TMYx WMO#=866250	-11.300	-57.500
138	Juina MT BRA SRC-TMYx WMO#=866240	-11.400	-58.800
139	Nova.Maringa MT BRA SRC-TMYx WMO#=866630	-13.000	-57.100
140	Novo.Mundo MT BRA SRC-TMYx WMO#=866430	-12.500	-58.200
141	Porto.Estrela MT BRA SRC-TMYx WMO#=867040	-15.300	-57.200
142	Salto.do.Ceu MT BRA SRC-TMYx WMO#=867030	-15.100	-58.100
143	Sinop MT BRA SRC-TMYx WMO#=866260	-12.000	-55.600
144	Sorriso MT BRA SRC-TMYx WMO#=866450	-12.600	-55.700
145	Tangara.da.Serra MT BRA SRC-TMYx WMO#=866820	-14.700	-57.400
146	Belem PA BRA SRC-TMYx WMO#=816800	-1.400	-48.500
147	Castanhal PA BRA SRC-TMYx WMO#=816820	-1.300	-48.000

Capítulo 6. Synthesis of climatic boundary conditions

ID	ListofEPW	LAT	LON
148	Maraba-Correa.da.Rocha.AP PA BRA SRC-TMYx WMO#=825620	-5.400	-49.100
149	Maraba PA BRA SRC-TMYx WMO#=818200	-5.200	-49.400
150	Novo.Repartimento PA BRA SRC-TMYx WMO#=817840	-4.300	-49.900
151	Paragominas PA BRA SRC-TMYx WMO#=817450	-3.000	-47.400
152	Santerem-Fonseca.Intl.AP PA BRA SRC-TMYx WMO#=822440	-2.400	-54.800
153	Areia PB BRA SRC-TMYx WMO#=818770	-7.000	-35.700
154	Campina.Grande-Suassuna.AP PB BRA SRC-TMYx WMO#=827950	-7.300	-35.900
155	Monteiro PB BRA SRC-TMYx WMO#=819140	-7.900	-37.100
156	Petrolina-Coelho.AP PB BRA SRC-TMYx WMO#=829840	-9.400	-40.600
157	Sao.Goncalo PB BRA SRC-TMYx WMO#=817740	-6.800	-38.300
158	Arco.Verde PE BRA SRC-TMYx WMO#=819530	-8.400	-37.100
159	Ouricuri PE BRA SRC-TMYx WMO#=819100	-7.900	-40.000
160	Recife PE BRA SRC-TMYx WMO#=819580	-8.100	-35.000
161	Serra.Talhada PE BRA SRC-TMYx WMO#=819120	-8.000	-38.300
162	Alvorada.do.Gurgueia PI BRA SRC-TMYx WMO#=818460	-8.400	-43.900
163	Bom.Jesus PI BRA SRC-TMYx WMO#=819870	-9.100	-44.400
164	Caracol PI BRA SRC-TMYx WMO#=819880	-9.300	-43.300
165	Gilbues PI BRA SRC-TMYx WMO#=819860	-9.900	-45.400
166	Morada.Nova PI BRA SRC-TMYx WMO#=818320	-5.100	-38.400
167	Oeiras PI BRA SRC-TMYx WMO#=818690	-7.000	-42.100
168	Paulistana PI BRA SRC-TMYx WMO#=819500	-8.100	-41.100
169	Teresina-Portella.AP PI BRA SRC-TMYx WMO#=825790	-5.100	-42.800
170	Teresina PI BRA SRC-TMYx WMO#=818270	-5.000	-42.800
171	Urucui PI BRA SRC-TMYx WMO#=819050	-7.500	-44.400
172	Cidade.Gaucha PR BRA SRC-TMYx WMO#=868980	-23.400	-52.900
173	Clevelandia PR BRA SRC-TMYx WMO#=869390	-26.400	-52.400
174	Curitiba-Pena.Intl.AP PR BRA SRC-TMYx WMO#=838400	-25.500	-49.200
175	Diamante.do.Norte PR BRA SRC-TMYx WMO#=868610	-22.600	-52.900
176	Dois.Vizinhos PR BRA SRC-TMYx WMO#=869270	-25.700	-53.100
177	Foz.do.Iguacu-Cataratas.Intl.AP PR BRA SRC-TMYx WMO#=838270	-25.600	-54.500
178	Icaraima PR BRA SRC-TMYx WMO#=868970	-23.400	-53.700
179	Inacio.Martins PR BRA SRC-TMYx WMO#=869290	-25.600	-51.100
180	Joaquim.Tavora PR BRA SRC-TMYx WMO#=869030	-23.500	-49.900
181	Londrina-Richa.AP PR BRA SRC-TMYx WMO#=837680	-23.300	-51.100
182	Maringa PR BRA SRC-TMYx WMO#=868990	-23.400	-51.900
183	Nova.Tebas PR BRA SRC-TMYx WMO#=869190	-24.400	-52.000
184	Paranapoema PR BRA SRC-TMYx WMO#=868620	-22.600	-52.100
185	Planalto PR BRA SRC-TMYx WMO#=869260	-25.700	-53.800
186	Campos-Lysandro.AP RJ BRA SRC-TMYx WMO#=836980	-21.700	-41.300
187	Campos RJ BRA SRC-TMYx WMO#=868550	-21.700	-41.400
188	Jacarepagua-Marinho.AP RJ BRA SRC-TMYx WMO#=831110	-23.000	-43.400
189	Macae-Lacerda.AP RJ BRA SRC-TMYx WMO#=868910	-22.300	-41.800
190	Nova.Friburgo RJ BRA SRC-TMYx WMO#=868890	-22.300	-42.500
191	Parati RJ BRA SRC-TMYx WMO#=869130	-23.200	-44.700
192	Resende RJ BRA SRC-TMYx WMO#=868740	-22.500	-44.400
193	Rio.de.Janeiro-Galeao-Jobim.Intl.AP RJ BRA SRC-TMYx WMO#=837460	-22.800	-43.200
194	Rio.de.Janeiro-Santos.Dumont.AP RJ BRA SRC-TMYx WMO#=837550	-22.900	-43.200
195	Rio.de.Janeiro.Forte.de.Copacabana RJ BRA SRC-TMYx WMO#=868870	-23.000	-43.200
196	Santa.Cruz.AP RJ BRA SRC-TMYx WMO#=837410	-22.900	-43.700
197	Teresopolis RJ BRA SRC-TMYx WMO#=868880	-22.400	-43.000
198	Xerem RJ BRA SRC-TMYx WMO#=868770	-22.600	-43.300
199	Apodi RN BRA SRC-TMYx WMO#=818350	-5.700	-37.800
200	Caico RN BRA SRC-TMYx WMO#=818750	-6.500	-37.100
201	Mossoro RN BRA SRC-TMYx WMO#=818340	-5.100	-37.400
202	Natal RN BRA SRC-TMYx WMO#=818390	-5.800	-35.200
203	Natal.Intl.AP RN BRA SRC-TMYx WMO#=825990	-5.900	-35.200
204	Ariquemes RO BRA SRC-TMYx WMO#=819700	-9.900	-63.000
205	Cacoal RO BRA SRC-TMYx WMO#=866220	-11.400	-61.400
206	Porto.Velho-Oliveira.Intl.AP RO BRA SRC-TMYx WMO#=828240	-8.700	-63.900
207	Boa.Vista.Intl.AP RR BRA SRC-TMYx WMO#=820220	2.900	-60.700
208	Alegrete RS BRA SRC-TMYx WMO#=869750	-29.700	-55.500
209	Bento.Goncalves RS BRA SRC-TMYx WMO#=869790	-29.200	-51.500
210	Capacava.do.Sul RS BRA SRC-TMYx WMO#=869860	-30.500	-53.500

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ID	ListofEPW	LAT	LON
211	Canela RS BRA SRC-TMYx WMO#=869800	-29.400	-50.800
212	Erechim RS BRA SRC-TMYx WMO#=869540	-27.700	-52.300
213	Jaguarao RS BRA SRC-TMYx WMO#=869960	-32.600	-53.400
214	Lagoa.Vermelha RS BRA SRC-TMYx WMO#=869650	-28.200	-51.500
215	Palmeira.das.Missoes RS BRA SRC-TMYx WMO#=869530	-27.900	-53.300
216	Passo.Fundo RS BRA SRC-TMYx WMO#=869630	-28.200	-52.400
217	Pelotas-Lopes.Neto.Intl.AP RS BRA SRC-TMYx WMO#=839850	-31.700	-52.300
218	Porto.Alegre-Canoas.AB RS BRA SRC-TMYx WMO#=839670	-29.900	-51.100
219	Porto.Alegre-Salgado.Filho.Intl.AP RS BRA SRC-TMYx WMO#=839710	-30.000	-51.200
220	Porto.Alegre RS BRA SRC-TMYx WMO#=869880	-30.100	-51.200
221	Quarai RS BRA SRC-TMYx WMO#=869820	-30.400	-56.400
222	Rio.Pardo RS BRA SRC-TMYx WMO#=869780	-29.900	-52.400
223	Santa.Rosa RS BRA SRC-TMYx WMO#=869500	-27.900	-54.500
224	Santiago RS BRA SRC-TMYx WMO#=869760	-29.200	-54.900
225	Santo.Augusto RS BRA SRC-TMYx WMO#=869520	-27.900	-53.800
226	Sao.Borja RS BRA SRC-TMYx WMO#=869600	-28.600	-56.000
227	Sao.Gabriel RS BRA SRC-TMYx WMO#=869840	-30.300	-54.300
228	Sao.Jose.dos.Ausentes RS BRA SRC-TMYx WMO#=869670	-28.800	-50.100
229	Sao.Luiz.Gonzaga RS BRA SRC-TMYx WMO#=869610	-28.400	-55.000
230	Soledade RS BRA SRC-TMYx WMO#=869640	-28.900	-52.500
231	Tramandai RS BRA SRC-TMYx WMO#=869900	-30.000	-50.100
232	Vacaria RS BRA SRC-TMYx WMO#=869660	-28.500	-50.900
233	Ararangua SC BRA SRC-TMYx WMO#=869710	-28.900	-49.500
234	Cacador SC BRA SRC-TMYx WMO#=869430	-26.800	-50.800
235	Curitibanos SC BRA SRC-TMYx WMO#=869560	-27.300	-50.600
236	Dionisio.Cerdeira SC BRA SRC-TMYx WMO#=869360	-26.300	-53.600
237	Florianopolis-Luz.Intl.AP SC BRA SRC-TMYx WMO#=838990	-27.700	-48.500
238	Indaiatuba SC BRA SRC-TMYx WMO#=869460	-26.900	-49.300
239	Itapoa SC BRA SRC-TMYx WMO#=869470	-26.100	-48.600
240	Ituporanga SC BRA SRC-TMYx WMO#=869570	-27.400	-49.600
241	Joacaba SC BRA SRC-TMYx WMO#=869550	-27.200	-51.600
242	Major.Vieira SC BRA SRC-TMYx WMO#=869420	-26.400	-50.400
243	Novo.Horizonte SC BRA SRC-TMYx WMO#=869380	-26.400	-52.900
244	Rio.do.Campo SC BRA SRC-TMYx WMO#=869440	-26.900	-50.100
245	Rio.Negrinho SC BRA SRC-TMYx WMO#=869450	-26.300	-49.600
246	Sao.Joaquim SC BRA SRC-TMYx WMO#=869690	-28.300	-49.900
247	Urubici SC BRA SRC-TMYx WMO#=869680	-28.100	-49.500
248	Xanxere SC BRA SRC-TMYx WMO#=869400	-26.900	-52.400
249	Aracaju-Santa.Maria.Intl.AP SE BRA SRC-TMYx WMO#=830950	-11.000	-37.100
250	Brejo.Grande SE BRA SRC-TMYx WMO#=866180	-10.500	-36.500
251	Carira SE BRA SRC-TMYx WMO#=866150	-10.400	-37.800
252	Poco.Verde SE BRA SRC-TMYx WMO#=866140	-10.700	-38.100
253	Ariranha SP BRA SRC-TMYx WMO#=868410	-21.100	-48.800
254	Barra.Bonita SP BRA SRC-TMYx WMO#=868670	-22.500	-48.500
255	Barretos SP BRA SRC-TMYx WMO#=868160	-20.600	-48.500
256	Bauru SP BRA SRC-TMYx WMO#=868650	-22.300	-49.100
257	Campinas-Viracopos.Intl.AP SP BRA SRC-TMYx WMO#=837210	-23.000	-47.100
258	Campo.Fontenelle.AP SP BRA SRC-TMYx WMO#=836710	-22.000	-47.300
259	Campos.do.Jordao SP BRA SRC-TMYx WMO#=868720	-22.700	-45.600
260	Casa.Branca SP BRA SRC-TMYx WMO#=868440	-21.800	-47.100
261	Ibitinga SP BRA SRC-TMYx WMO#=868430	-21.900	-48.800
262	Itapeva SP BRA SRC-TMYx WMO#=869050	-24.000	-48.900
263	Itapira SP BRA SRC-TMYx WMO#=868690	-22.400	-46.800
264	Ituverava SP BRA SRC-TMYx WMO#=868170	-20.400	-47.800
265	Jales SP BRA SRC-TMYx WMO#=868140	-20.200	-50.600
266	Lins SP BRA SRC-TMYx WMO#=868400	-21.700	-49.700
267	Ouriinhos SP BRA SRC-TMYx WMO#=868660	-22.900	-49.900
268	Piracicaba SP BRA SRC-TMYx WMO#=868680	-22.700	-47.500
269	Pradopolis SP BRA SRC-TMYx WMO#=868420	-21.300	-48.100
270	Presidente.Prudente SP BRA SRC-TMYx WMO#=868630	-22.100	-51.400
271	Rancharia SP BRA SRC-TMYx WMO#=868640	-22.400	-51.000
272	Sao.Miguel.Arcanjo SP BRA SRC-TMYx WMO#=869060	-23.900	-48.200
273	Sao.Paulo-Campo.de.Marte.AP SP BRA SRC-TMYx WMO#=837790	-23.500	-46.600

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ID	ListofEPW	LAT	LON
274	Sao.Paulo-Congonhas.AP SP BRA SRC-TMYx WMO#=837800	-23.600	-46.700
275	Valparaiso SP BRA SRC-TMYx WMO#=868380	-21.300	-50.900
276	Dianopolis TO BRA SRC-TMYx WMO#=866320	-11.600	-46.900
277	Formoso.do.Araguaia TO BRA SRC-TMYx WMO#=866290	-11.900	-49.600
278	Gurupi TO BRA SRC-TMYx WMO#=866300	-11.800	-49.000