

Performance based Climatic zoning

Florida Georgia and Tennessee



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.

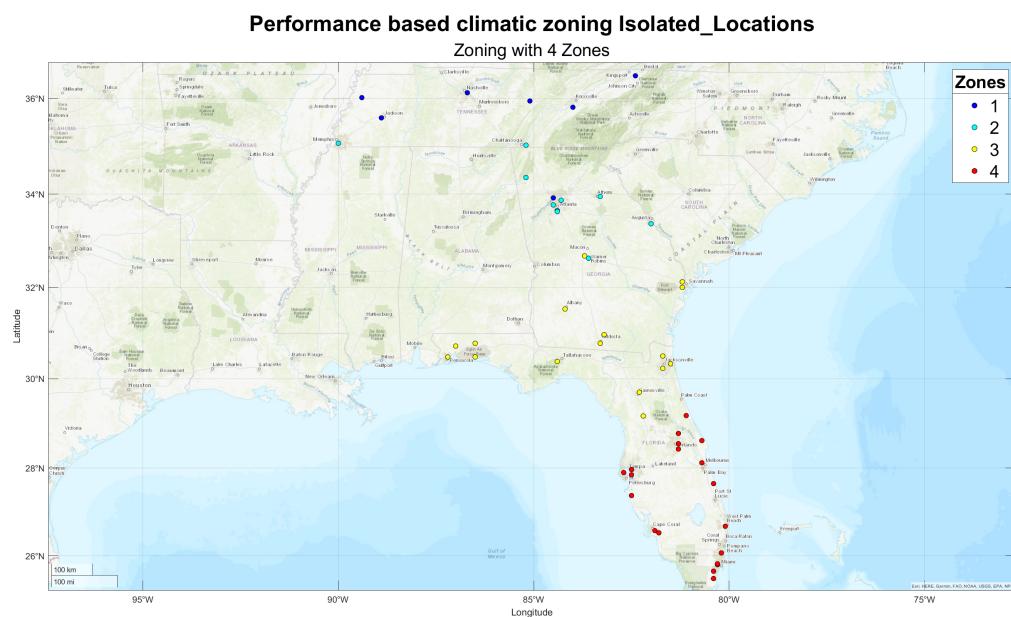


Figure 1.1. Isolated_Locations zoning

Chapter 1. Climatic zoning results

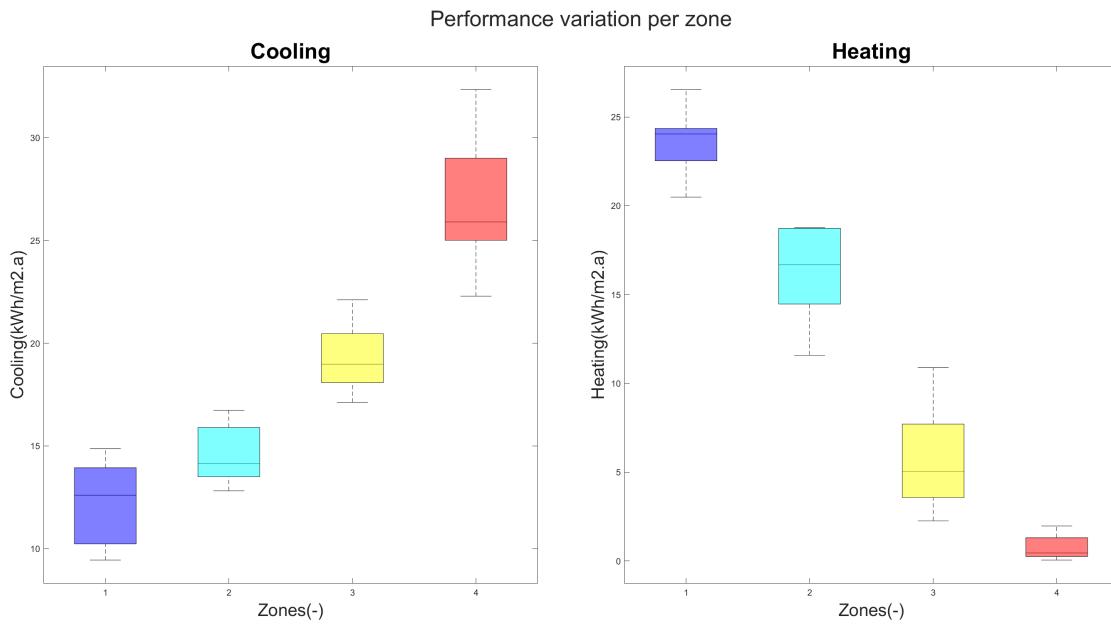


Figure 1.2. Isolated_Locations zoning boxplot

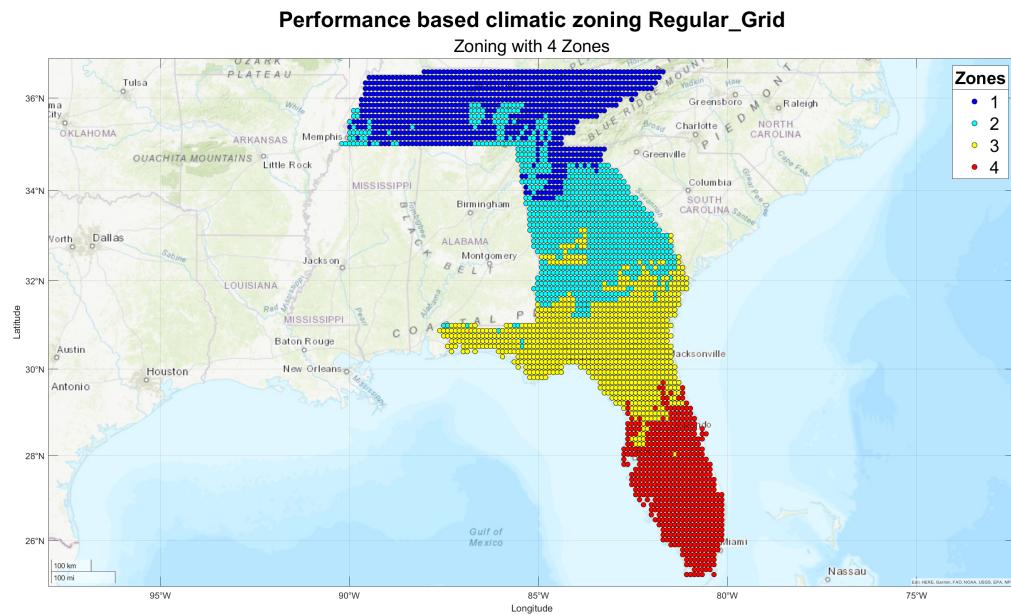


Figure 1.3. Regular_Grid zoning

Chapter 1. Climatic zoning results

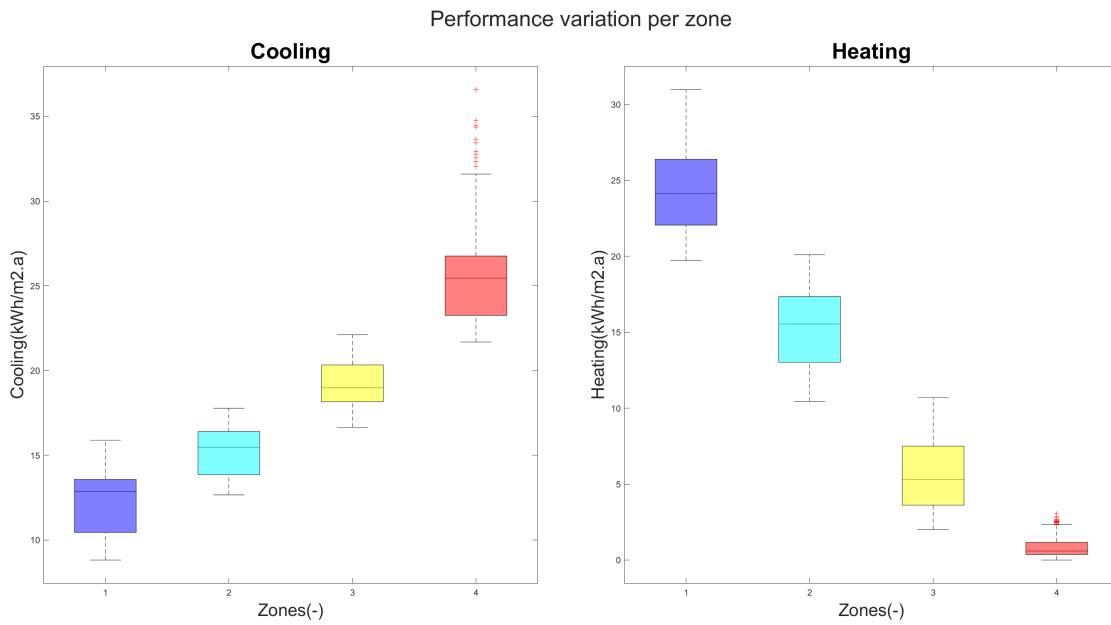


Figure 1.4. Regular_Grid zoning boxplot

Chapter 2. Alternative methods for comparison

2.1. Alternative methods for comparison

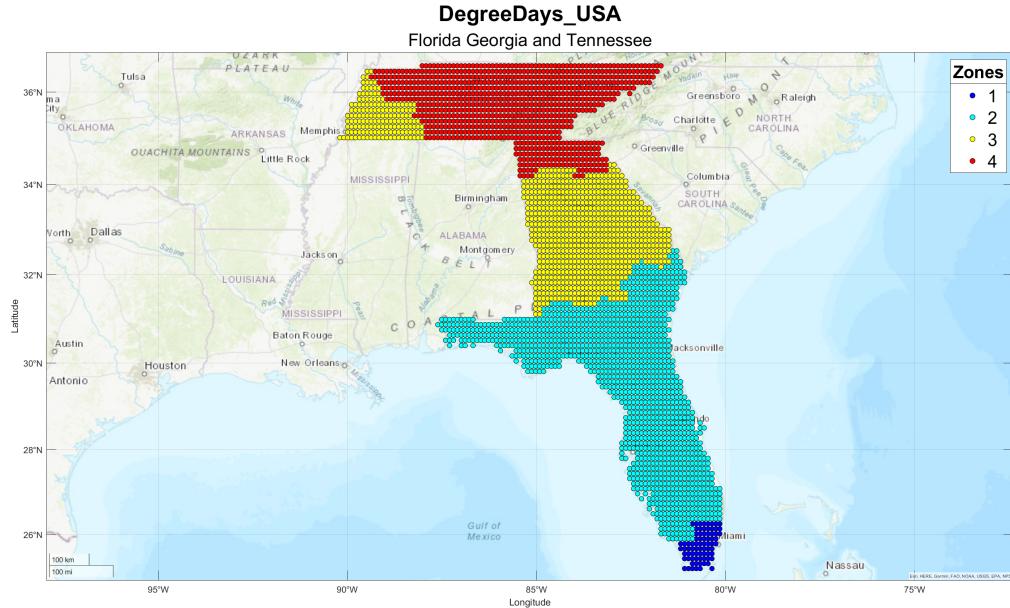


Figure 2.1. DegreeDays_USA

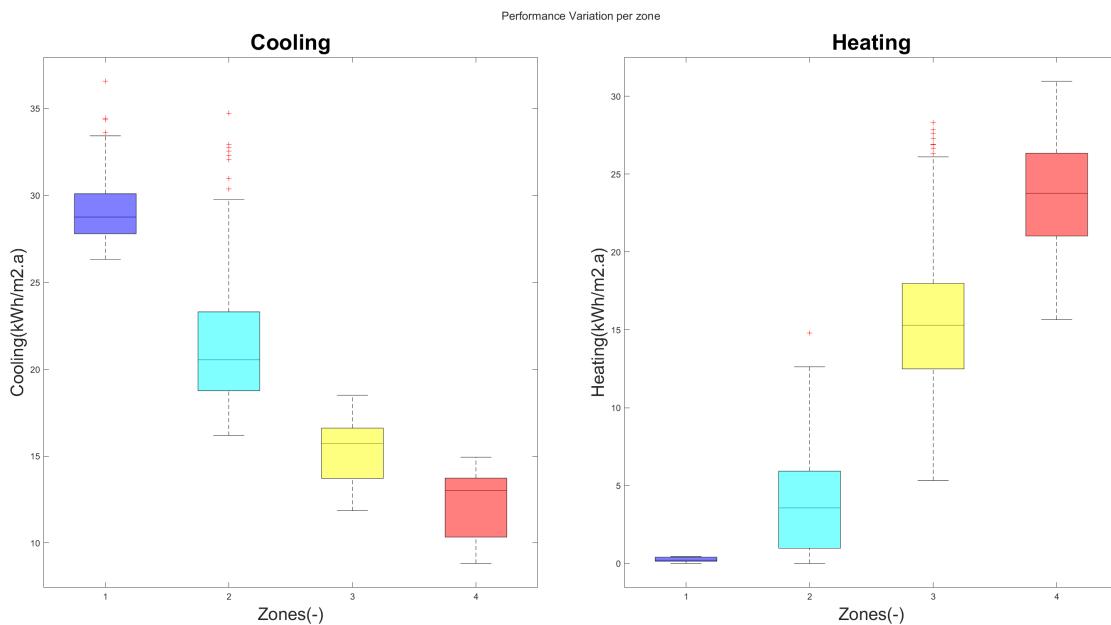


Figure 2.2. DegreeDays_USA zoning boxplot

Chapter 3. MPMA results

3.1. MPMA results using centroids method

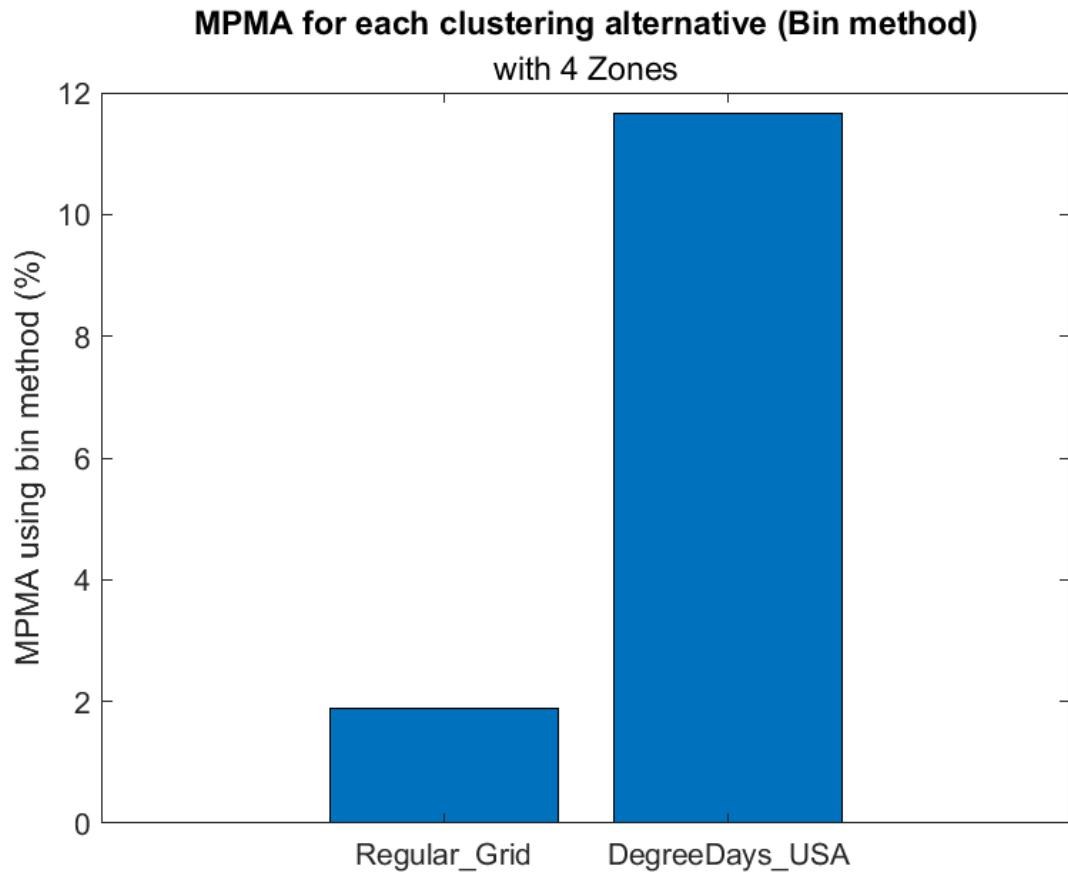


Figure 3.1. MPMA for each clustering alternative Bin method

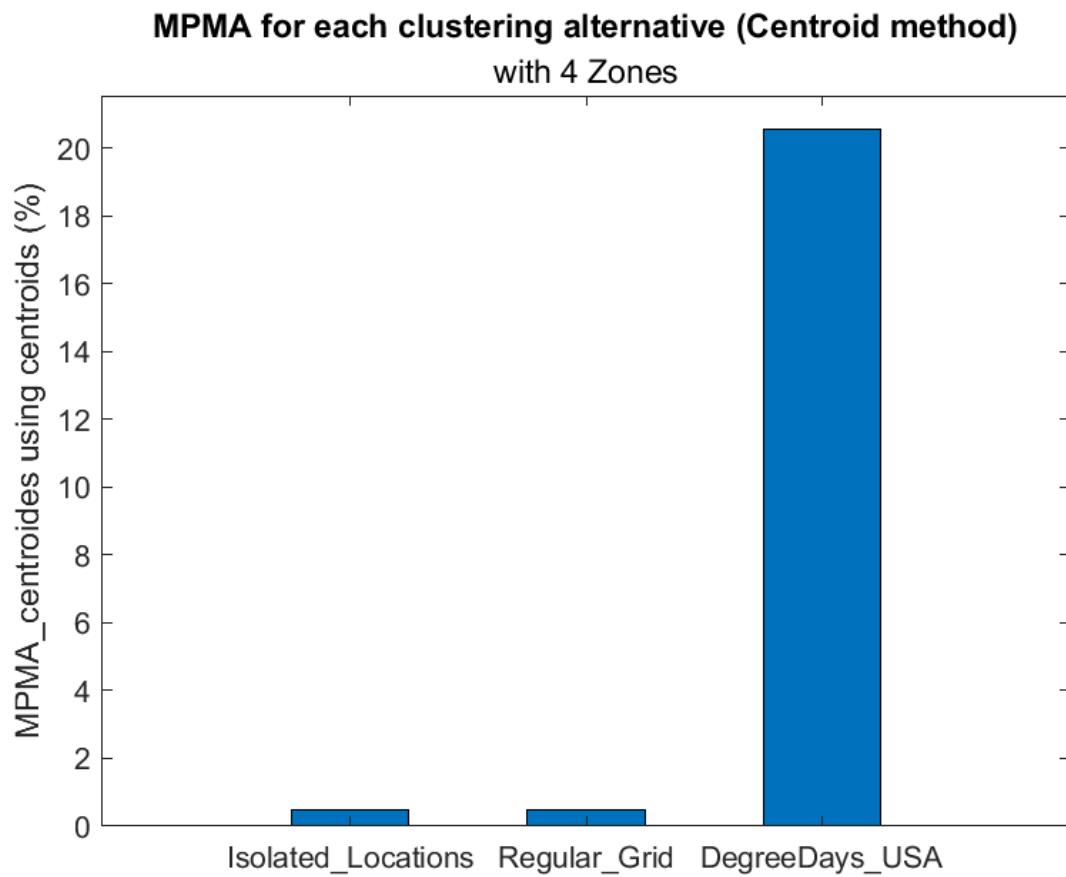


Figure 3.2. MPMA_centroides for each clustering alternative

Chapter 4. Interpolation using Altitude, longitude and latitude

4.1. Grid used for interpolation

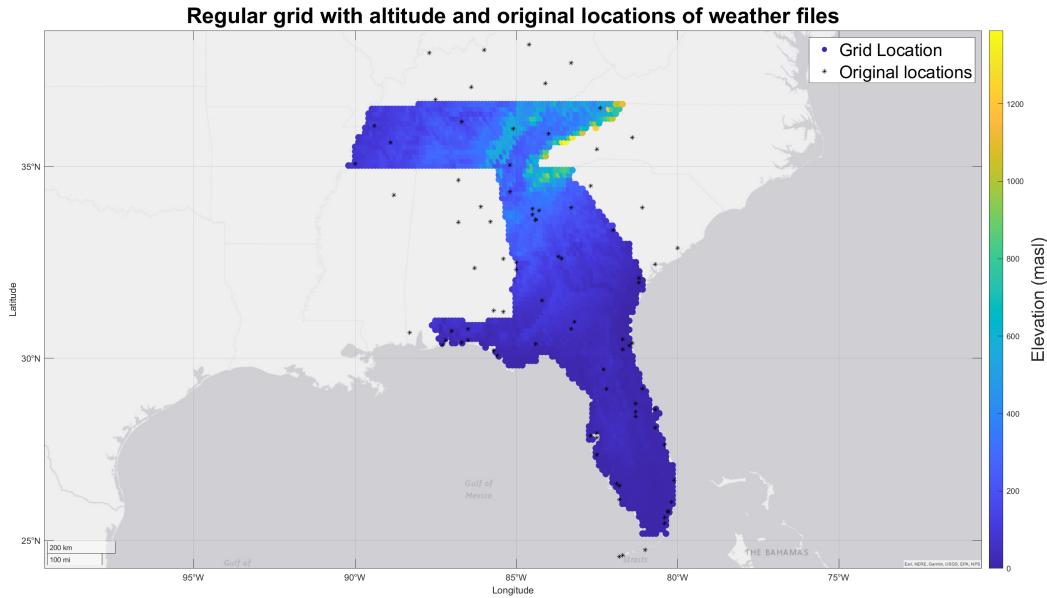


Figure 4.1. Regular grid_elevation

4.2. Interpolated performance maps

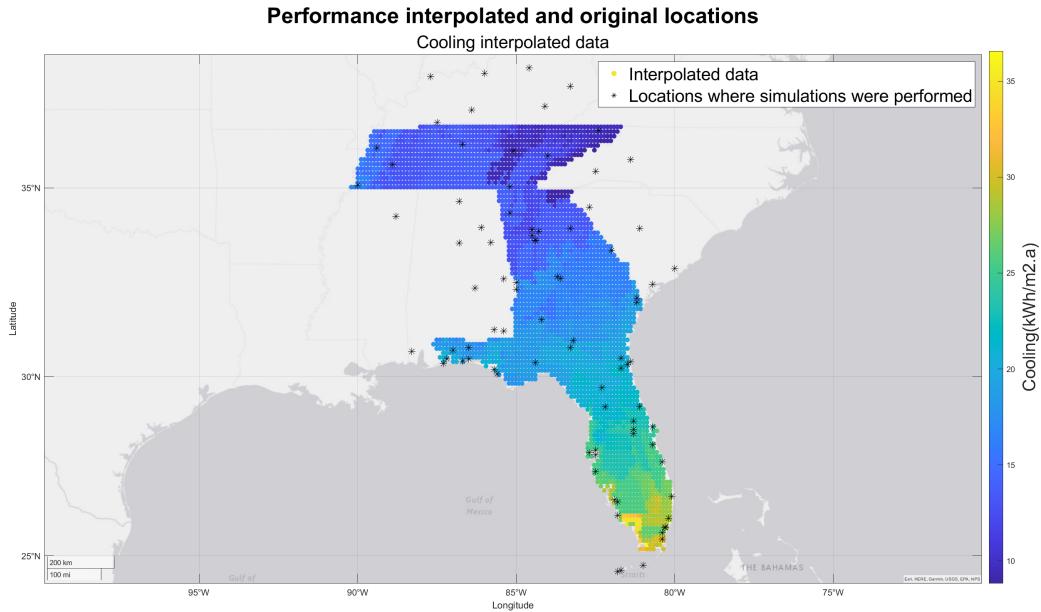


Figure 4.2. Cooling Performance mapRegular_Grid

Chapter 4. Interpolation using Altitude, longitude and latitude

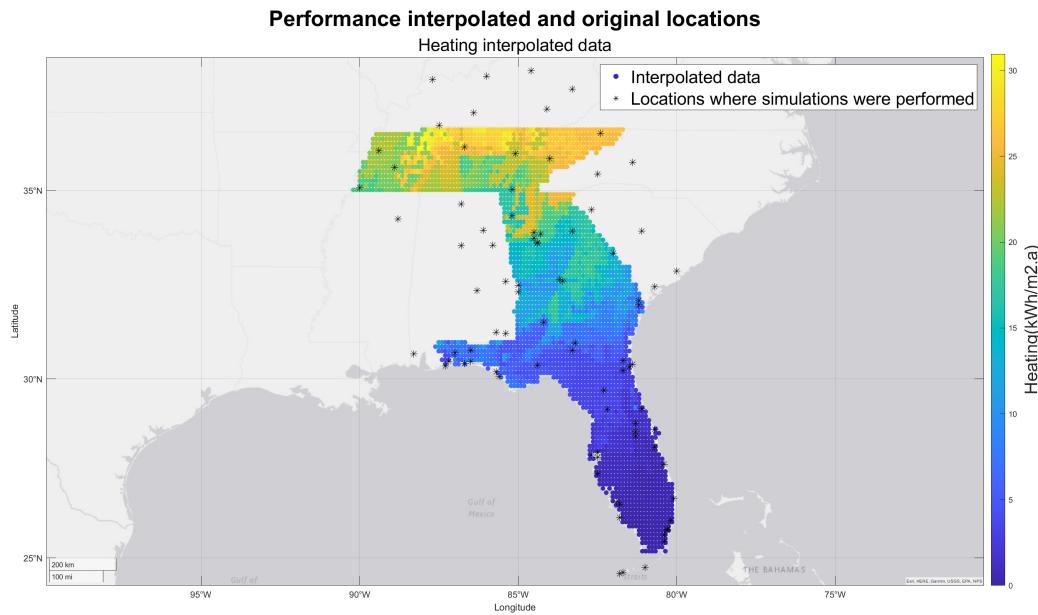


Figure 4.3. Heating Performance mapRegular_Grid

Chapter 5. Performance maps

5.1. Performance maps for quality control

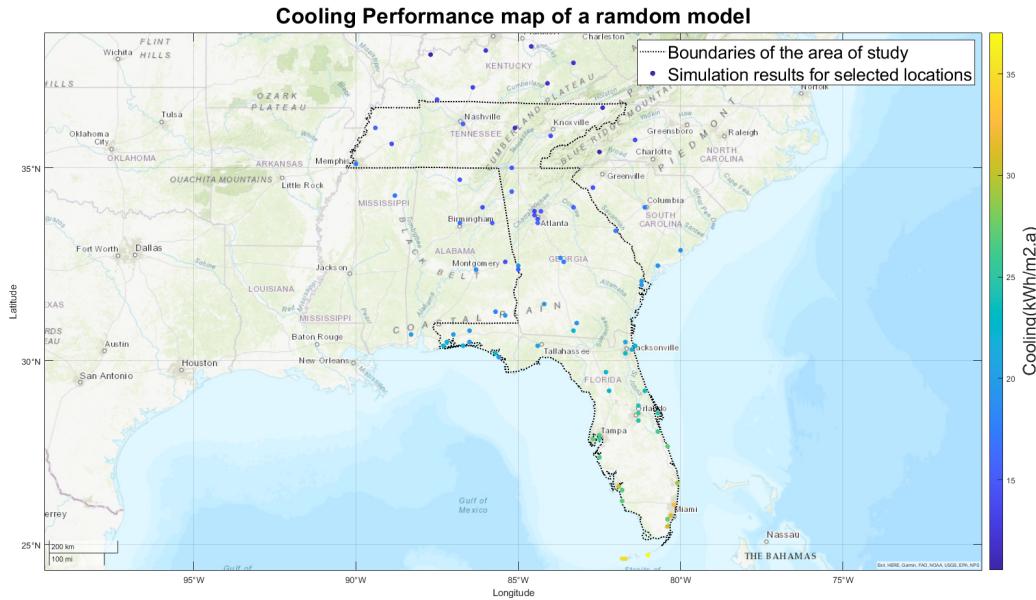


Figure 5.1. Cooling Performance map of a random model

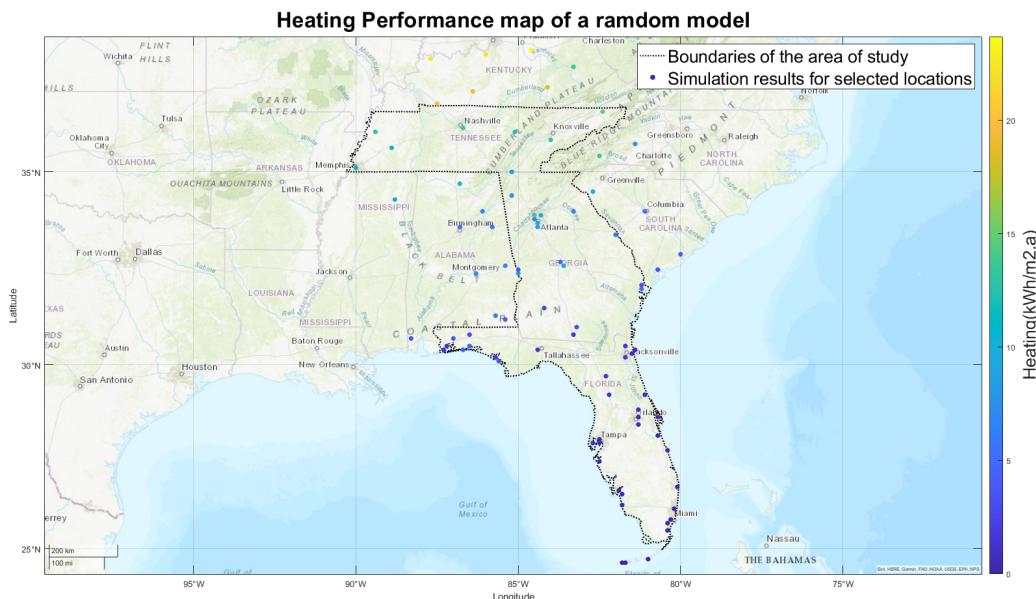


Figure 5.2. Heating Performance map of a random model

Chapter 6. Synthesis of climatic boundary conditions

6.1. Weather data used in this study

Weather data summary:

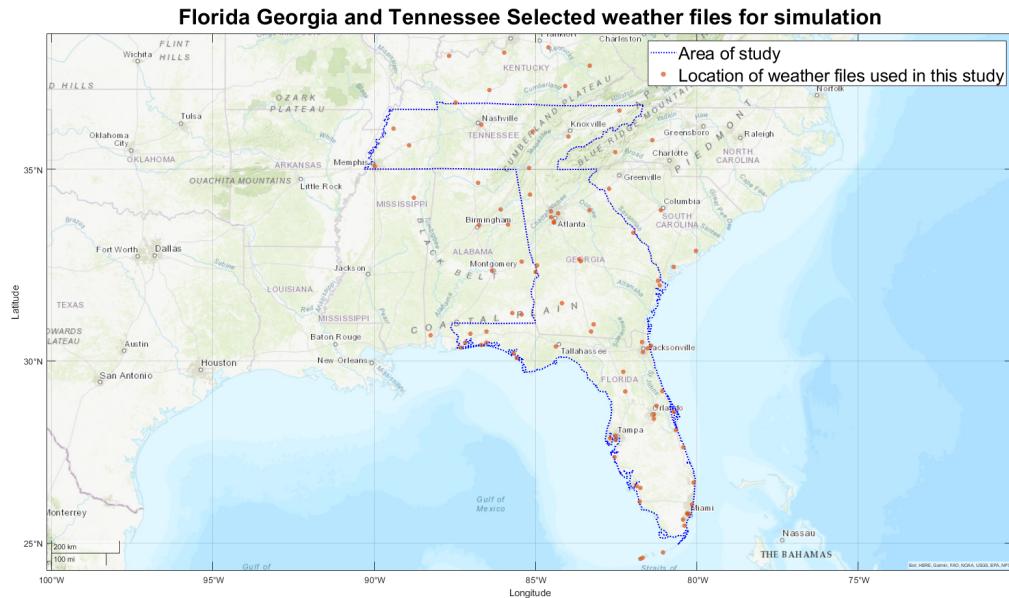


Figure 6.1. Weather data included in this study

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

ID	ListofEPW	LAT	LON
1	Anniston Metropolitan Ap AL USA TMY3 WMO#=722287	33.600	-85.800
2	Auburn Opelika Apt AL USA TMY3 WMO#=722284	32.600	-85.400
3	Birmingham Municipal Ap AL USA TMY3 WMO#=722280	33.600	-86.800
4	Dothan Municipal Ap AL USA TMY3 WMO#=722268	31.200	-85.400
5	Cairns Field Fort Rucker AL USA TMY3 WMO#=722269	31.300	-85.700
6	Gadsen Muni Awos AL USA TMY3 WMO#=722285	34.000	-86.100
7	Huntsville Intl Jones Field AL USA TMY3 WMO#=723230	34.700	-86.800
8	Maxwell Afb AL USA TMY3 WMO#=722265	32.400	-86.300
9	Mobile Regional Ap AL USA TMY3 WMO#=722230	30.700	-88.300
10	Crestview Bob Sikes Ap FL USA TMY3 WMO#=722215	30.800	-86.500
11	Daytona Beach Intl Ap FL USA TMY3 WMO#=722056	29.200	-81.100
12	Fort Lauderdale Hollywood Int FL USA TMY3 WMO#=722025	26.100	-80.200
13	Fort Myers Page Field FL USA TMY3 WMO#=722106	26.600	-81.900
14	Valparaiso Hurlburt FL USA TMY3 WMO#=747770	30.400	-86.700
15	Gainesville Regional Ap FL USA TMY3 WMO#=722146	29.700	-82.300
16	Homestead Afb FL USA TMY3 WMO#=722026	25.500	-80.400
17	Jacksonville Craig FL USA TMY3 WMO#=722068	30.300	-81.500
18	Jacksonville Intl Arpt FL USA TMY3 WMO#=722060	30.500	-81.700
19	Jacksonville Nas FL USA TMY3 WMO#=722065	30.200	-81.700
20	Key West Intl Arpt FL USA TMY3 WMO#=722010	24.600	-81.800
21	Key West Nas FL USA TMY3 WMO#=722015	24.600	-81.700

Chapter 6. Synthesis of climatic boundary conditions

ID	ListofEPW	LAT	LON
22	Macdill Afb FL USA TMY3 WMO#=747880	27.900	-82.500
23	Marathon Airport FL USA TMY3 WMO#=722016	24.700	-81.000
24	Mayport Ns FL USA TMY3 WMO#=722066	30.400	-81.400
25	Melbourne Regional Ap FL USA TMY3 WMO#=722040	28.100	-80.700
26	MIAMI FL USA TMY2-12839 WMO#=722020	25.800	-80.300
27	Miami Kendall Tamia FL USA TMY3 WMO#=722029	25.700	-80.400
28	Miami/Int'l Airport FL USA TMY--12839 WMO#=722020	25.800	-80.300
29	Miami Intl Ap FL USA TMY3 WMO#=722020	25.800	-80.300
30	Naples Municipal FL USA TMY3 WMO#=722038	26.200	-81.800
31	Nasa Shuttle Fclty FL USA TMY3 WMO#=747946	28.600	-80.700
32	Ocala Muni Awos FL USA TMY3 WMO#=722055	29.200	-82.200
33	Orlando Sanford Airport FL USA TMY3 WMO#=722057	28.800	-81.300
34	Orlando Executive Ap FL USA TMY3 WMO#=722053	28.600	-81.300
35	Orlando Intl Arpt FL USA TMY3 WMO#=722050	28.400	-81.300
36	Panama City Bay Co FL USA TMY3 WMO#=722245	30.200	-85.700
37	Pensacola Forest Sherman Nas FL USA TMY3 WMO#=722225	30.400	-87.300
38	Pensacola Regional Ap FL USA TMY3 WMO#=722223	30.500	-87.200
39	Sarasota Bradenton FL USA TMY3 WMO#=722115	27.400	-82.500
40	Southwest Florida I FL USA TMY3 WMO#=722108	26.500	-81.800
41	St Petersburg Clear FL USA TMY3 WMO#=722116	27.900	-82.700
42	Tallahassee Regional Ap Isis FL USA TMY3 WMO#=722140	30.400	-84.400
43	Tampa International Ap FL USA TMY3 WMO#=722110	28.000	-82.500
44	Tyndall Afb FL USA TMY3 WMO#=747750	30.100	-85.600
45	Valparaiso Elgin Afb FL USA TMY3 WMO#=722210	30.500	-86.500
46	Vero Beach Municipal Arpt FL USA TMY3 WMO#=722045	27.700	-80.400
47	West Palm Beach Intl Arpt FL USA TMY3 WMO#=722030	26.700	-80.100
48	Whiting Field Naas FL USA TMY3 WMO#=722226	30.700	-87.000
49	Albany Dougherty County Ap GA USA TMY3 WMO#=722160	31.500	-84.200
50	Athens Ben Epps Ap GA USA TMY3 WMO#=723110	34.000	-83.300
51	ATLANTA GA USA TMY2-13874 WMO#=722190	33.700	-84.400
52	Atlanta Hartsfield Intl Ap GA USA TMY3 WMO#=722190	33.600	-84.400
53	Augusta Bush Field GA USA TMY3 WMO#=722180	33.400	-82.000
54	Columbus Metropolitan Arpt GA USA TMY3 WMO#=722255	32.500	-85.000
55	Dekalb Peachtree GA USA TMY3 WMO#=722196	33.900	-84.300
56	Fort Benning Lawson GA USA TMY3 WMO#=722250	32.400	-85.000
57	Fulton Co Arpt Brow GA USA TMY3 WMO#=722195	33.800	-84.500
58	Macon Middle Ga Regional Ap GA USA TMY3 WMO#=722170	32.700	-83.700
59	Marietta Dobbins Afb GA USA TMY3 WMO#=722270	33.900	-84.500
60	Rome R B Russell Ap GA USA TMY3 WMO#=723200	34.400	-85.200
61	Hunter Aaf GA USA TMY3 WMO#=747804	32.000	-81.200
62	Savannah Intl Ap GA USA TMY3 WMO#=722070	32.100	-81.200
63	Moody Afb Valdosta GA USA TMY3 WMO#=747810	31.000	-83.200
64	Valdosta Wb Airport GA USA TMY3 WMO#=722166	30.800	-83.300
65	Warner Robins Afb GA USA TMY3 WMO#=722175	32.600	-83.600
66	Bowling Green Warren Co Ap KY USA TMY3 WMO#=746716	37.000	-86.400
67	Fort Campbell Aaf KY USA TMY3 WMO#=746710	36.700	-87.500
68	Fort Knox Godman Aaf KY USA TMY3 WMO#=724240	37.900	-86.000
69	Henderson City KY USA TMY3 WMO#=724238	37.800	-87.700
70	Jackson Julian Carroll Ap KY USA TMY3 WMO#=724236	37.600	-83.300
71	Lexington Bluegrass Ap KY USA TMY3 WMO#=724220	38.000	-84.600
72	London Corbin Ap KY USA TMY3 WMO#=724243	37.100	-84.100
73	Tupelo C D Lemons Arpt MS USA TMY3 WMO#=723320	34.300	-88.800
74	Asheville Regional Arpt NC USA TMY3 WMO#=723150	35.400	-82.500
75	Hickory Regional Ap NC USA TMY3 WMO#=723145	35.700	-81.400
76	Anderson County Ap SC USA TMY3 WMO#=723125	34.500	-82.700
77	Beaufort Mcas SC USA TMY3 WMO#=722085	32.500	-80.700
78	Charleston Intl Arpt SC USA TMY3 WMO#=722080	32.900	-80.000
79	Columbia Metro Arpt SC USA TMY3 WMO#=723100	34.000	-81.100
80	Bristol Tri City Airport TN USA TMY3 WMO#=723183	36.500	-82.400
81	Chattanooga Lovell Field Ap TN USA TMY3 WMO#=723240	35.000	-85.200
82	Crossville Memorial Ap TN USA TMY3 WMO#=723265	36.000	-85.100
83	Dyersburg Municipal Ap TN USA TMY3 WMO#=723347	36.000	-89.400
84	Jackson McKellar Sipes Regl A TN USA TMY3 WMO#=723346	35.600	-88.900

Chapter 6. Synthesis of climatic boundary conditions

ID	ListofEPW	LAT	LON
85	Knoxville McGhee Tyson Ap TN USA TMY3 WMO#=723260	35.800	-84.000
86	Memphis International Ap TN USA TMY3 WMO#=723340	35.100	-90.000
87	Nashville International Ap TN USA TMY3 WMO#=723270	36.100	-86.700