

Spatiotemporal Distribution of Heatwave Hazards in Chinese Mainland for the Period 1990-2019

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Introduction

Supplementary information contains two tables of total 100 cities and counties in terms of average heatwave hazard ranking based on the zonal statistics methodology. The two tables also show the slope of AH of each administrative unit.

Table S1. Top 100 cities by average hazard (AH)

index	City	MEAN	Slope	city-class	index	City	MEAN	Slope	city-class
1	*Luohe, Henan	0.6388	0.0106	fifth-tier	51	Jining City	0.4393	0.0073	third-tier
2	*Jiaozuo, Henan	0.6380	0.0104	fourth-tier	52	Quzhou, Zhejiang	0.4367	0.0063	fourth-tier
3	*Xuchang, Henan	0.6359	0.0119	fourth-tier	53	*Suzhou, Jiangsu	0.4322	0.0119	fourth-tier
4	Guang'an, Sichuan	0.6020	0.0155	fifth-tier	54	*Nanjing, Jiangsu	0.4314	0.0138	new first-tier
5	*Hebi, Henan	0.5985	0.0135	fifth-tier	55	*Wuxi, Jiangsu	0.4307	0.0145	second-tier
6	Karamay, Xinjiang	0.5931	-0.0043	fifth-tier	56	*Changzhou, Jiangsu	0.4307	0.0145	second-tier
7	*Turpan, Xinjiang	0.5922	0.0116	fifth-tier	57	*Jiaxing, Zhejiang	0.4293	0.0177	second-tier

8	*Xinxiang, Henan	0.5867	0.0163	third-tier	58	Xiaogan, Hubei	0.4243	0.0067	fourth-tier
9	*Puyang, Henan	0.5786	0.0128	fifth-tier	59	*Zhuzhou, Hunan	0.4236	0.0108	third-tier
10	Dezhou, Shandong	0.5607	0.0050	fourth-tier	60	Hangzhou, Zhejiang	0.4206	0.0091	new first-tier
11	*Pingdingshan, Henan	0.5603	0.0118	fourth-tier	61	Wuhu, Anhui	0.4180	0.0065	third-tier
12	Liaocheng, Shandong	0.5540	0.0083	fourth-tier	62	*Huainan, Anhui	0.4136	0.0100	fourth-tier
13	Hengyang, Hunan	0.5528	0.0134	third-tier	63	*Yueyang, Hunan	0.4082	0.0119	third-tier
14	*Kaifeng, Henan	0.5521	0.0177	fourth-tier	64	*Huzhou, Zhejiang	0.4056	0.0132	third-tier
15	Jinhua, Zhejiang	0.5459	0.0125	second-tier	65	*Dongying, Shandong	0.4042	0.0139	fourth-tier
16	*Ezhou, Hubei	0.5416	0.0145	fifth-tier	66	*Changde, Hunan	0.4038	0.0121	fourth-tier
17	*Anyang, Henan	0.5395	0.0108	fourth-tier	67	*Xinyang, Henan	0.4035	0.0088	third-tier
18	*Zhengzhou, Henan	0.5349	0.0129	new first-tier	68	Haikou, Hainan	0.3997	0.0055	second-tier
19	Xinyu, Jiangxi	0.5305	0.0064	fifth-tier	69	*Xianning, Hubei	0.3996	0.0090	fourth-tier
20	*Bozhou, Anhui	0.5252	0.0109	fourth-tier	70	* Bayingoleng, Xinjiang	0.3938	0.0088	fifth-tier
21	*Huaibei, Anhui	0.5243	0.0140	fifth-tier	71	Chongqing	0.3935	0.0096	new first-tier
22	Hengshui, Hebei	0.5238	0.0061	fifth-tier	72	*Zhenjiang, Jiangsu	0.3914	0.0149	third-tier
23	*Zhoukou, Henan	0.5234	0.0133	fourth-tier	73	*Sanya, Hainan	0.3859	0.0123	third-tier
24	*Shangqiu, Henan	0.5233	0.0097	third-tier	74	Hefei, Anhui	0.3848	0.0067	second-tier
25	*Zhumadian, Henan	0.5210	0.0137	fourth-tier	75	*Jingzhou, Hubei	0.3798	0.0107	third-tier
26	Handan, Hebei	0.5069	0.0072	third-tier	76	*Zaozhuang, Shandong	0.3767	0.0121	fourth-tier
27	Tacheng, Xinjiang	0.5051	-0.0033	fifth-tier	77	*Hami, Xinjiang	0.3720	0.0064	fifth-tier
28	*Heze, Shandong	0.5040	0.0100	fourth-tier	78	Dazhou, Sichuan	0.3717	0.0099	fifth-tier
29	*Yingtian, Jiangxi	0.5038	0.0095	fourth-tier	79	Pingxiang, Jiangxi	0.3707	0.0079	fifth-tier
30	Nanchang, Jiangxi	0.5019	0.0086	second-tier	80	Yibin, Sichuan	0.3698	0.0116	fourth-tier
31	Xingtai, Hebei	0.4968	0.0061	fourth-tier	81	*Chuzhou, Anhui	0.3698	0.0108	third-tier
32	*Wuhan, Hubei	0.4929	0.0103	new first-tier	82	*Yiyang, Hunan	0.3697	0.0128	fourth-tier
33	*Ji'an, Jiangxi	0.4922	0.0108	fourth-tier	83	*Huanggang, Hubei	0.3694	0.0091	fourth-tier
34	Binzhou, Shandong	0.4900	0.0101	fourth-tier	84	*Xuzhou, Jiangsu	0.3691	0.0129	second-tier
35	Shaoxing, Zhejiang	0.4861	0.0103	second-tier	85	Langfang, Hebei	0.3654	0.0083	third-tier
36	*Nanyang, Henan	0.4845	0.0133	third-tier	86	*Suizhou, Hubei	0.3585	0.0094	fifth-tier
37	*Changsha, Hunan	0.4837	0.0122	new first-tier	87	*Suzhou, Jiangsu	0.3577	0.0183	new first-tier
38	Nanchong, Jiangsu	0.4746	0.0130	fourth-tier	88	*Xiangyang, Hubei	0.3537	0.0067	third-tier
39	*Fuyang, Anhui	0.4727	0.0110	third-tier	89	Tongling, Anhui	0.3503	0.0062	fourth-tier
40	*Xiangtan, Hunan	0.4724	0.0152	third-tier	90	*Foshan, Guangdong	0.3474	0.0112	second-tier
41	*Danzhou, Hainan	0.4697	0.0154	fifth-tier	91	Zibo, Shandong	0.3453	0.0082	third-tier
42	Fuzhou, Fujian	0.4690	0.0085	fourth-tier	92	*Ganzhou, Jiangxi	0.3416	0.0101	third-tier
43	Cangzhou, Hebei	0.4667	0.0070	third-tier	93	Baoding, Hebei	0.3415	0.0050	third-tier

44	*Huangshi, Hubei	0.4641	0.0128	fourth-tier	94	Jingmen, Hubei	0.3397	0.0076	fifth-tier
45	Shijiazhuang, Hebei	0.4575	0.0079	second-tier	95	*Yongzhou, Hunan	0.3359	0.0109	fourth-tier
46	*Bengbu, Anhui	0.4463	0.0107	third-tier	96	Shiyan, Hubei	0.3331	0.0045	fourth-tier
47	Ma'anshan, Anhui	0.4413	0.0089	third-tier	97	Zigong, Sichuan	0.3308	0.0082	fifth-tier
48	Yichun, Jiangxi	0.4409	0.0063	fourth-tier	98	Jinan, Shandong	0.3306	0.0036	second-tier
49	Shangrao, Jiangxi	0.4401	0.0058	third-tier	99	Tai'an, Shandong	0.3278	0.0056	third-tier
50	Jingdezhen, Jiangxi	0.4396	0.0045	fourth-tier	100	Tianjin	0.3242	0.0098	new first-tier

Note: * means that the city passed the significance test; the top 10 cities in terms of heatwave hazard increase are given in bold.

Table S2. Top 100 counties by AH

index	County	MEAN	Slope	index	County	MEAN	Slope
1	Yuzhong District, Chongqing	0.8055	0.0169	51	*Shangjie District, Zhengzhou, Henan	0.6543	0.0117
2	Jiangbei District, Chongqing	0.7983	0.0170	52	*Xinhua District, Pingdingshan, Henan	0.6541	0.0138
3	*Dadukou District, Chongqing	0.7943	0.0179	53	Yanfeng District, Hengyang, Hunan	0.6532	0.0133
4	Nan'an District, Chongqing	0.7694	0.0169	54	* Yuanyang County, Xinxiang, Henan	0.6528	0.019
5	*Wen County, Jiaozuo, Henan	0.7407	0.0108	55	*Jiefang District, Jiaozuo, Henan	0.6506	0.0116
6	*Jiulongpo District, Chongqing	0.7403	0.0180	56	*Shancheng District, Hebi, Henan	0.6492	0.0120
7	*Macun District, Jiaozuo, Henan	0.7331	0.0146	57	*Wuyang County, Luohe, Henan	0.6488	0.0112
8	*Wuzhi County, Jiaozuo, Henan	0.7327	0.0143	58	*Yanjin County, Xinxiang, Henan	0.6488	0.019
9	*Yindu District, Anyang, Henan	0.7277	0.0130	59	Beibei District, Chongqing	0.6486	0.0157
10	*Jindong District, Jinhua, Zhejiang	0.7269	0.0163	60	Baijiantan District, Karamay, Xinjiang	0.6454	-0.0052
11	* Beiguan District, Anyang, Henan	0.7134	0.0114	61	*Jia County, Pingdingshan, Henan	0.6454	0.0125
12	*Huojia County, Xinxiang, Henan	0.7130	0.0169	62	*Ye County, Pingdingshan, Henan	0.6448	0.0127
13	*Linzhang County, Handan, Hebei	0.7081	0.0117	63	* Erqi District, Zhengzhou, Henan	0.6441	0.0163
14	Banan District, Chongqing	0.7065	0.0159	64	*Anyang County, Anyang, Henan	0.6431	0.0101
15	*Changshou District, Chongqing	0.7057	0.0175	65	Yancheng District, Luohe, Henan	0.6417	0.0106
16	Hanshan Distinct, Handan, Hebei	0.7027	0.0092	66	Yiwu, Jinhua, Zhejiang	0.6407	0.0147
17	*Wenfeng District, Anyang, Henan	0.7001	0.0122	67	*Furong District, Changsha, Hunan	0.6403	0.0146
18	*Cheng'an County, Handan, Hebei	0.6983	0.0103	68	*Baofeng County, Pingdingshan, Henan	0.6403	0.0126
19	*Shapingba District, Chongqing	0.6971	0.0169	69	*Xingyang, Zhengzhou, Henan	0.6401	0.0129
20	Yubei District, Chongqing	0.6946	0.0163	70	Luhe Hui District, Luoyang, Henan	0.6400	0.0081
21	*Shanyang District, Jiaozuo, Henan	0.6938	0.0124	71	Jili District, Luoyang, Henan	0.6384	0.0073
22	*Weidu District, Xuchang, Henan	0.6899	0.0111	72	*Weidong District, Pingdingshan, Henan	0.6379	0.0124

					Henan		
23	*Muye District, Xinxiang, Henan	0.6890	0.0186	73	Daming County, Handan, Hebei	0.6356	0.0108
24	Weibin District, Xinxiang, Henan	0.6882	0.0185	74	*Yuanhui District, Luohe, Henan	0.6352	0.0105
25	Fengquan District, Xinxiang, Henan	0.6879	0.0173	75	Karamay District, Karamay, Xinjiang	0.6348	-0.0052
26	Huiji District, Zhengzhou, Henan	0.6863	0.0178	76	Guantao County, Handan, Hebei	0.6328	0.0086
27	*Xinxiang County, Xinxiang, Henan	0.6822	0.0191	77	Hechuan District, Chongqing	0.6321	0.0155
28	*Zhongyuan District, Zhengzhou, Henan	0.6797	0.0172	78	*Zhengxiang District, Hengyang, Hunan	0.6315	0.0154
29	*Xiangcheng County, Xuchang, Henan	0.6775	0.0123	79	Yangling District, Xianyang, Shaanxi	0.6313	0.0090
30	* Jinshui District, Zhengzhou, Henan	0.6763	0.0185	80	Guang'an District, Guang'an, Sichuan	0.6289	0.0158
31	*Tangyin County, Anyang, Henan	0.6754	0.0121	81	Gaoyi County, Shijiazhuang, Hebei	0.6285	0.0089
32	*Long'an District, Anyang, Henan	0.6753	0.0118	82	*Zhongmu County, Zhengzhou, Henan	0.6277	0.0189
33	*Jiangjin District, Chongqing	0.6737	0.0164	83	Changning, Hengyang, Hunan	0.6264	0.0115
34	Jian'an District, Xuchang, Henan	0.6731	0.0116	84	*Xinzheng, Zhengzhou, Henan	0.6260	0.0153
35	*Weixian County, Handan, Hebei	0.6713	0.0105	85	*Zhong County, Chongqing	0.6253	0.0155
36	Guangping County, Handan, Hebei	0.6710	0.0091	86	Qinyang, Jiaozuo, Henan	0.6249	0.0070
37	Feixiang District, Handan, Hebei	0.6696	0.0089	87	Luancheng District, Shijiazhuang, Hebei	0.6246	0.0088
38	*Hongqi District, Xinxiang, Henan	0.6693	0.0202	88	*Yongchuan District, Chongqing	0.6246	0.0199
39	Lanxi, Jinhua, Zhejiang	0.6676	0.0128	89	Baixiang County, Xingtai, Hebei	0.6245	0.0084
40	Mengzhou, Jiaozuo, Henan	0.6651	0.0084	90	Wusheng County, Guang'an, Sichuan	0.6229	0.0142
41	*Guancheng District, Zhengzhou, Henan	0.6651	0.0174	91	Zhuhui District, Hengyang, Hunan	0.6226	0.0146
42	*Jizhou District, Ji'an, Jiangxi	0.6618	0.0143	92	Quzhou County, Handan, Hebei	0.6216	0.0084
43	*Xun County, Hebi, Henan	0.6614	0.0154	93	*Yuhua District, Changsha, Hunan	0.6204	0.0144
44	*Bishan District, Chongqing	0.6602	0.0183	94	*Yongkang, Jinhua, Zhejiang	0.6202	0.0146
45	*Neihuang County, Anyang, Henan	0.6594	0.0117	95	Qiaoxi District, Shijiazhuang, Hebei	0.6200	0.0102
46	*Zhanhe District, Pingdingshan, Henan	0.6591	0.0141	96	Hengnan County, Hengyang, Hunan	0.6199	0.0131
47	*Shanshan County, Turpan, Xinjiang	0.6577	0.0121	97	Congtai District, Handan, Hebei	0.6193	0.0081
48	*Dianjiang County, Chongqing	0.6563	0.0174	98	*Shilong District, Pingdingshan, Henan	0.6189	0.0121
49	Changge, Xuchang, Henan	0.6560	0.0134	99	*Shifeng District, Zhuzhou, Hunan	0.6154	0.0143

50	*Linying County, Luohe, Henan	0.6550	0.0108	100	*Binjiang District, Hangzhou, Zhejiang	0.6153	0.0169
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Note: * means that the city passed the significance test; the top 10 cities in terms of heatwave hazard increase are given in bold.