腾讯定位大数据

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数据源： https://heat.qq.com/

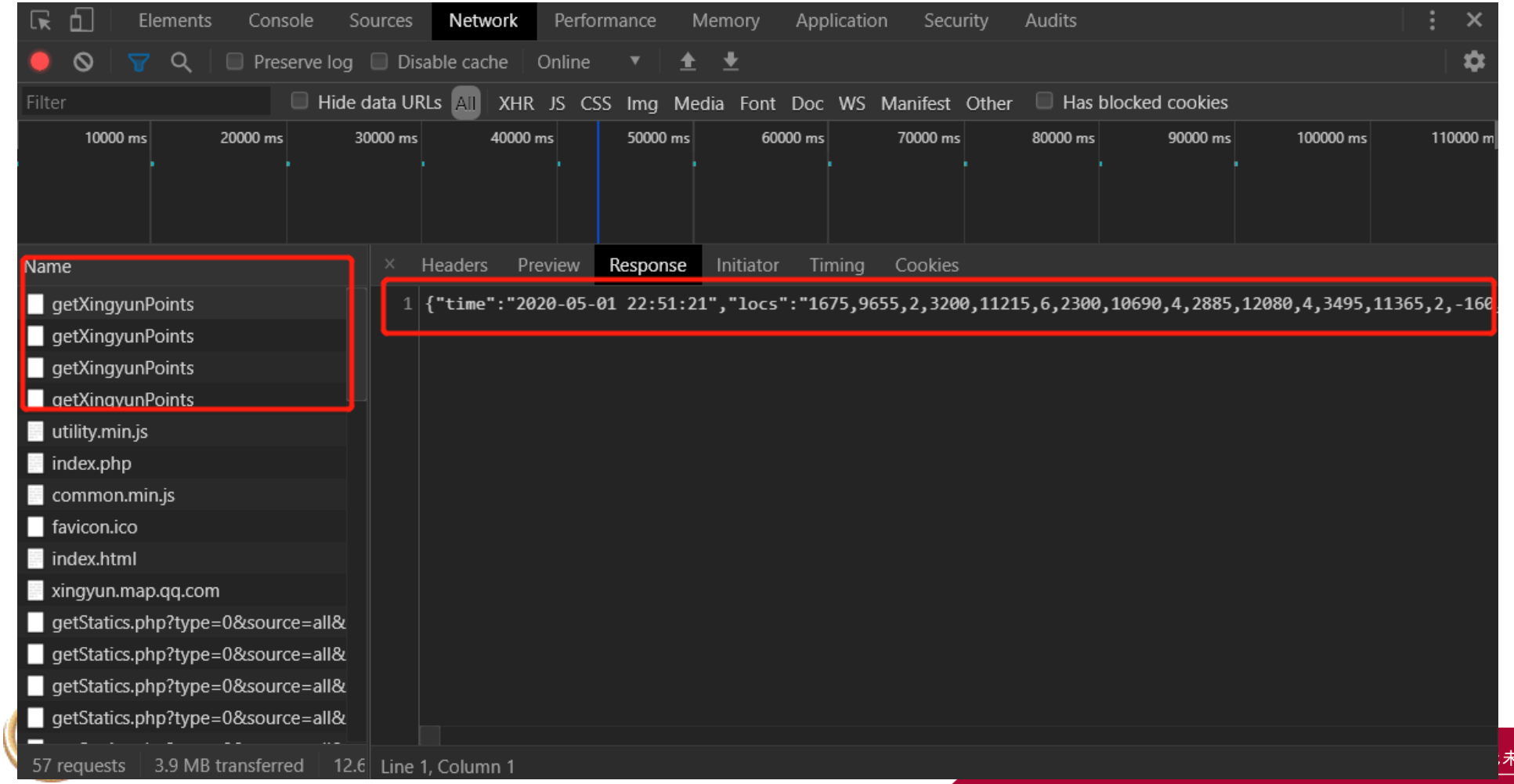
数据简介

数据产生于所有使用腾讯位置服务的产品（例如微信、QQ、腾讯地图、京东和美团），定位点的定位次数代表一定网格范围内的服务使用量，定位次数不是人数，但有一定联系

空间范围：全国
空间分辨率：1km * 1km (2019)，5km * 5km (2020-)
时间范围：2019.12 – 2020.04
时间分辨率：小时
类型：固定位置的时序数据，流数据

数据获取

解析并存储网页 json 数据 (getXingYunPoints)



数据获取的技术细节

```
import requests
import json
import pandas as pd
from pathlib import Path
```

Python packages

```
url='https://xingyun.map.qq.com/api/getXingyunPoints'

locs=''
paload={'count':count,'rank':rank}

response=requests.post(url,data=json.dumps(paload))
datas=response.text
dictdatas=json.loads(datas)
```

Requesting & parsing

```
time=dictdatas["time"]
locs=dictdatas["locs"]
locss=locs.split(",")

temp=[]
for i in range(int(len(locss)/3)):
    lat = locss[0+3*i]
    lon = locss[1+3*i]
    count = locss[2+3*i]

    temp.append([time,int(lat)/100,int(lon)/100,count])
```

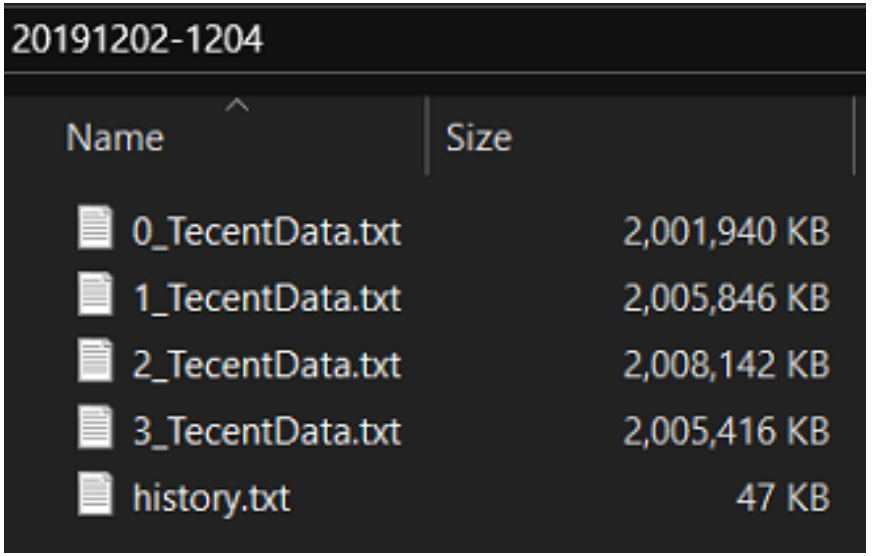
Formatting & storing

源代码参考：
https://zhuanlan.zhihu.com/p/74574015

原始数据截图

	time	lat	lon	count
0	2019-12-02 15:22:28	10.6	105	2
1	2019-12-02 15:22:28	-7.35	112.75	2
2	2019-12-02 15:22:28	36.5	115.05	1
3	2019-12-02 15:22:28	26.9	112.65	1
4	2019-12-02 15:22:28	35.45	139.6	2
...	...	...	...	...
58446916	2019-12-04 15:17:28	30.2	107.3	1
58446917	2019-12-04 15:17:28	34.2	132.7	1
58446918	2019-12-04 15:17:28	41.05	111.45	3
58446919	2019-12-04 15:17:28	16.35	95.85	1
58446920	2019-12-04 15:17:28	-15.9	-48.3	63

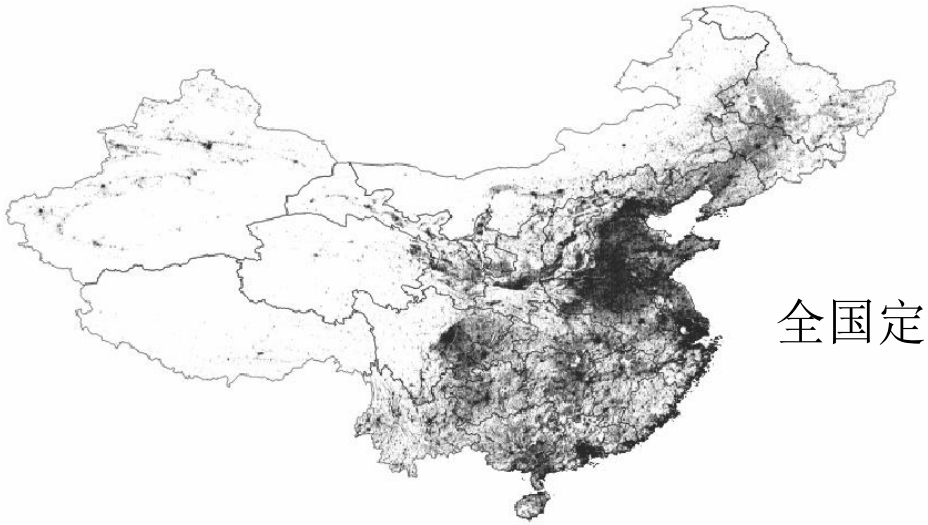
58446921 rows × 4 columns



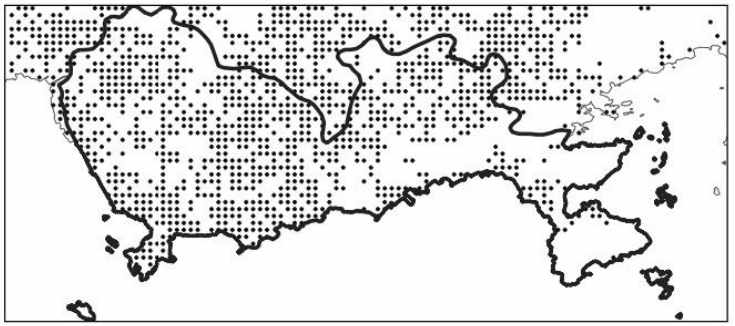
数据样例

Time	Lat	Lon	Count
2020-04-19 18:00:48	29.48	120.04	2
2020-04-19 18:00:48	23.00	104.06	23

全国平均每日 2000万条数据

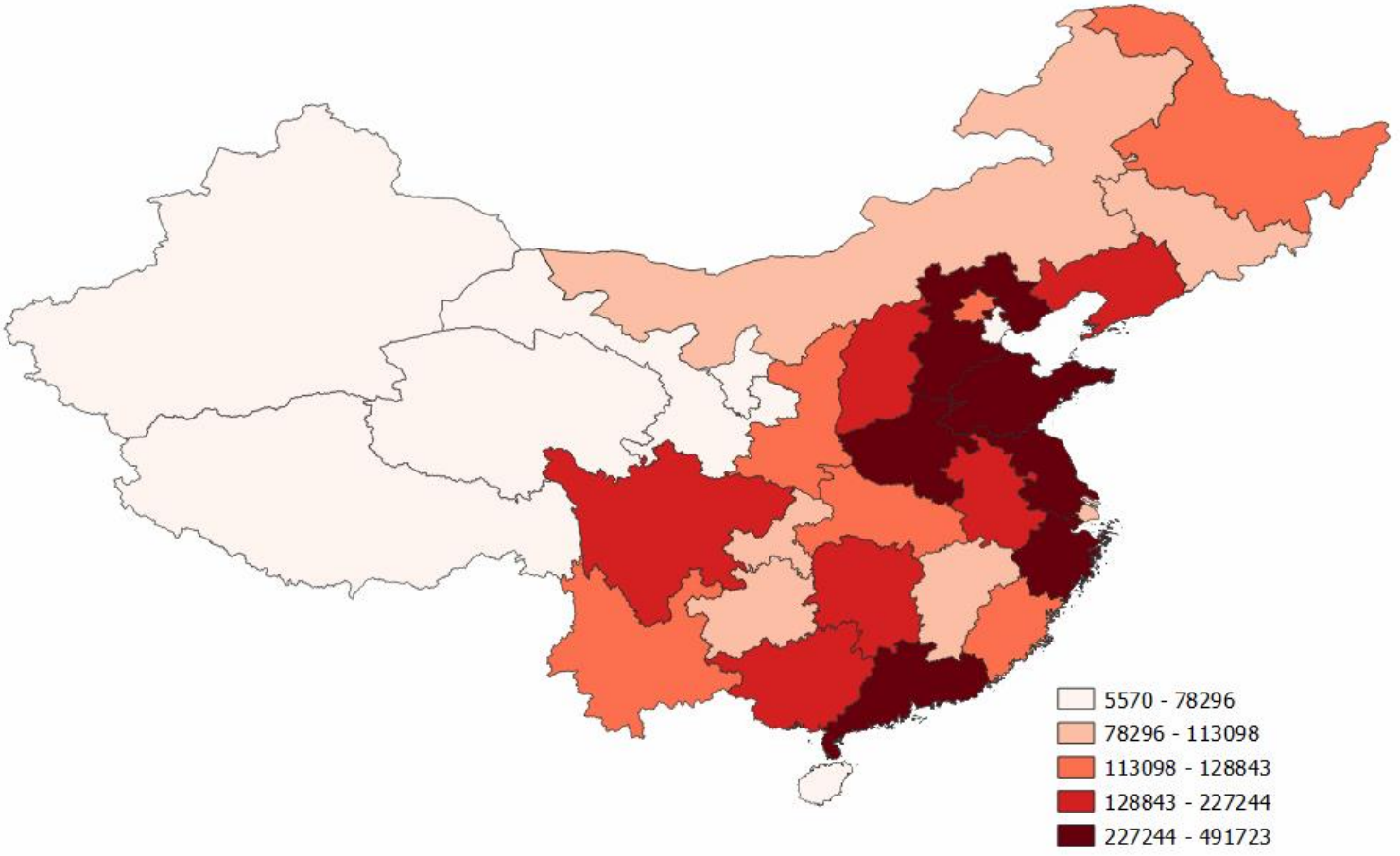


全国定位点（大约230万个点）



深圳

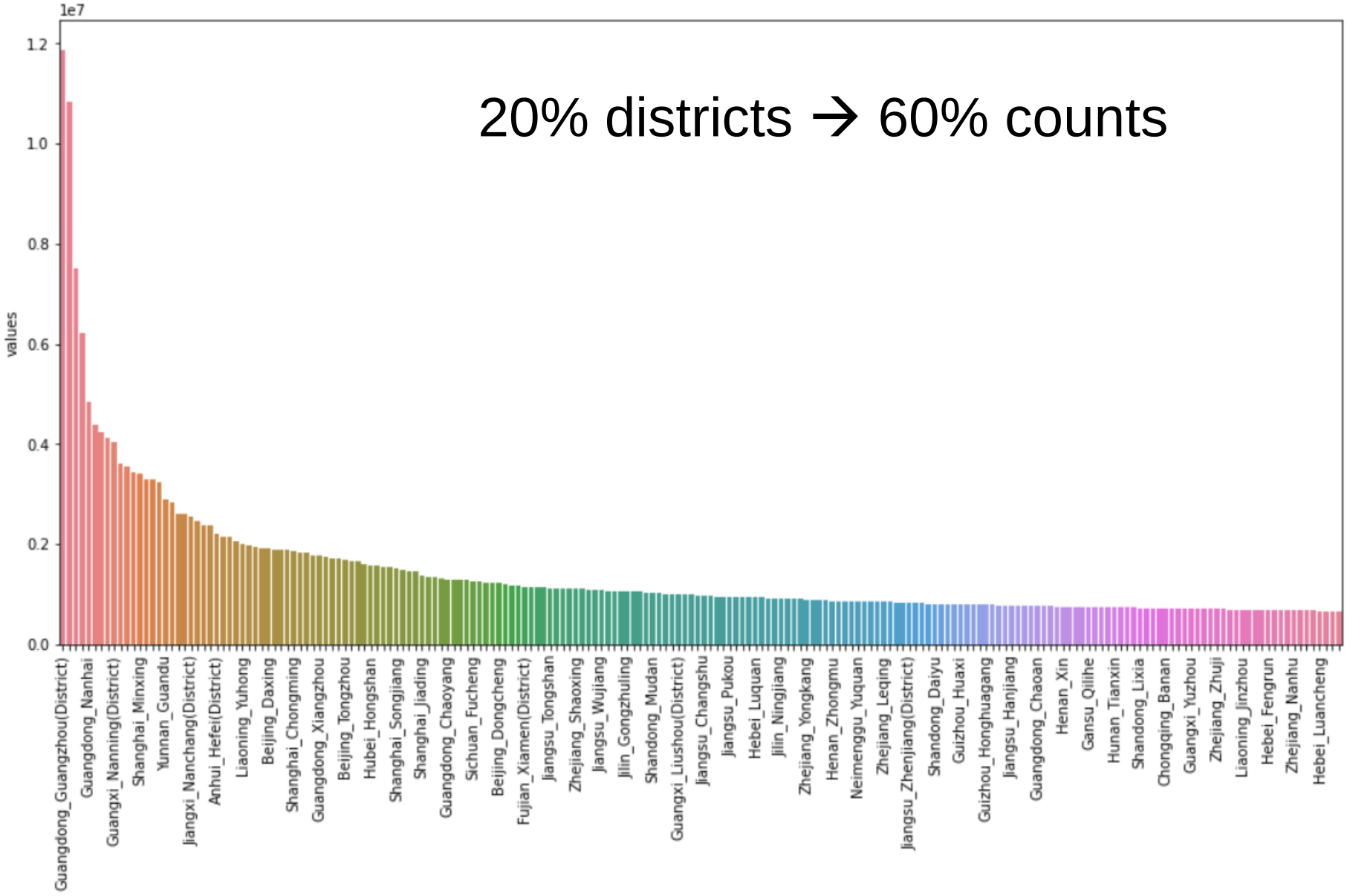
全国各省1秒的定位数


5570 - 78296
78296 - 113098
113098 - 128843
128843 - 227244
227244 - 491723

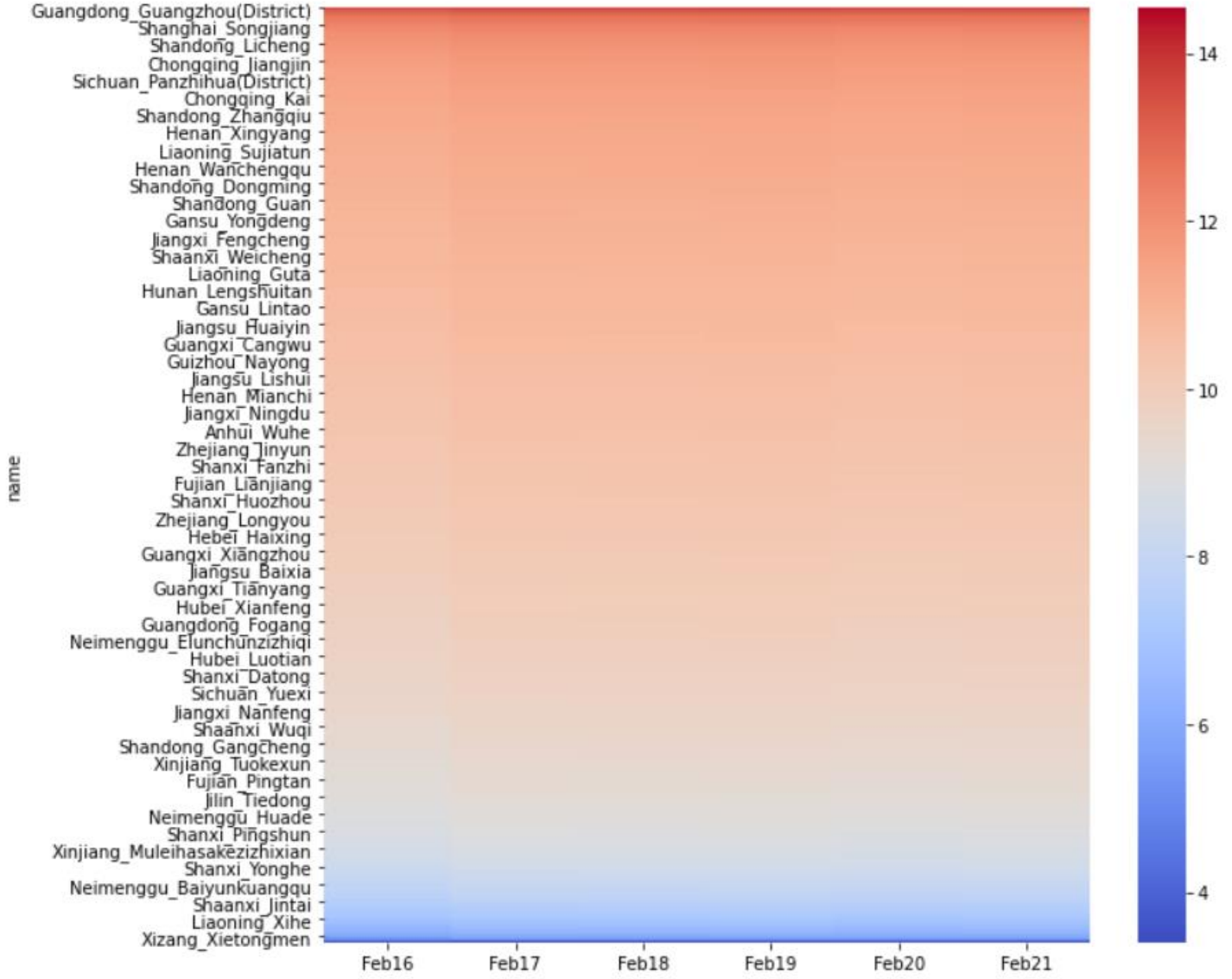
探索分析

lid	dist	prov	Feb16	Feb17	Feb18	Feb19	Feb20	Feb21
140427	Huguan	Shanxi	11481	12974	13022	13138	12520	12796
621227	Hui	Gansu	14201	16271	16195	16470	15434	16122
350521	Huian	Fujian	1954	2213	2229	2206	2098	2153
360733	Huichang	Jiangxi	21845	25062	25097	25393	23803	24941
441302	Huicheng	Guangdong	158700	181363	181014	184228	175141	179571
222404	Huichun	Jilin	23466	27484	27271	28164	25799	27570
441323	Huidong	Guangdong	77858	92338	91609	93909	88230	91670
513426	Huidong	Sichuan	18635	21264	21039	21420	20668	21064

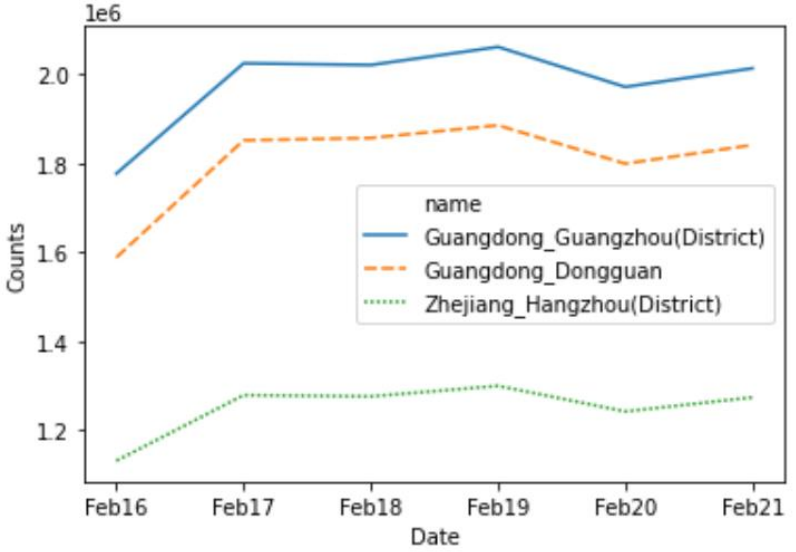
6天总定位数


1e7
1.2
1.0
0.8
0.6
0.4
0.2
0.0
values
20% districts → 60% counts
Guangdong_Guangzhou(District)
Guangdong_Nanhai
Guangxi_Nanning(District)
Shanghai_Minxing
Yunnan_Guandu
Jiangxi_Nanchang(District)
Anhui_Hefei(District)
Liaoning_Yuhong
Beijing_Daxing
Shanghai_Chongming
Guangdong_Xiangzhou
Beijing_Tongzhou
Hubei_Hongshan
Shanghai_Songjiang
Shanghai_Jiading
Guangdong_Chaoyang
Sichuan_Fucheng
Beijing_Dongcheng
Fujian_Xiamen(District)
Jiangsu_Tongshan
Zhejiang_Shaoxing
Jiangsu_Wujiang
Jilin_Gongzhuling
Shandong_Mudan
Guangxi_Liushou(District)
Jiangsu_Changshu
Jiangsu_Pukou
Hebei_Luquan
Jilin_Ningjiang
Zhejiang_Yongkang
Henan_Zhongmu
Neimenggu_Yuquan
Zhejiang_Leqing
Jiangsu_Zhenjiang(District)
Shandong_Daiyu
Guizhou_Huaxi
Guizhou_Honghuagang
Jiangsu_Hanjiang
Guangdong_Chaoan
Henan_Xin
Gansu_Qilihe
Hunan_Tianxin
Shandong_Lixia
Chongqing_Banan
Guangxi_Yuzhou
Zhejiang_Zhuji
Liaoning_Jinzhou
Hebei_Fengrun
Zhejiang_Nanhu
Hebei_Luancheng

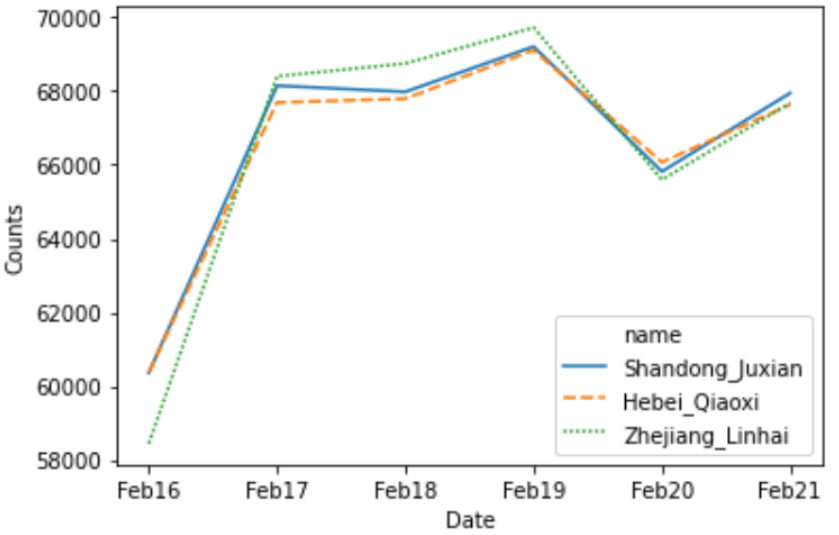
时序变化和排序


Guangdong_Guangzhou(District)
Shanghai_Songjiang
Shandong_Licheng
Chongqing_Jiangjin
Sichuan_Panzhihua(District)
Chongqing_Kai
Shandong_Zhangqiu
Henan_Xingyang
Liaoning_Sujiatun
Henan_Wanchengqu
Shandong_Dongming
Shandong_Guan
Gansu_Yongdeng
Jiangxi_Fengcheng
Shaanxi_Weicheng
Liaoning_Guta
Hunan_Lengshuitan
Gansu_Lintao
Jiangsu_Huaiyin
Guangxi_Cangwu
Guizhou_Nayong
Jiangsu_Lishui
Henan_Mianchi
Jiangxi_Ningdu
Anhui_Wuhe
Zhejiang_Jinyun
Shanxi_Fanzhi
Fujian_Lianjiang
Shanxi_Huozhou
Zhejiang_Longyou
Hebei_Haixing
Guangxi_Xiangzhou
Jiangsu_Baixia
Guangxi_Tianyang
Hubei_Xianfeng
Guangdong_Fogang
Neimenggu_Elunchunzizhiqi
Hubei_Luotian
Shanxi_Datong
Sichuan_Yuexi
Jiangxi_Nanfeng
Shaanxi_Wuqi
Shandong_Gangcheng
Xinjiang_Tuokexun
Fujian_Pingtan
Jilin_Tiedong
Neimenggu_Huade
Shanxi_Pingshun
Xinjiang_Muleihasakezizhixian
Shanxi_Yonghe
Neimenggu_Baiyunkuangqu
Shaanxi_Jintai
Liaoning_Xihe
Xizang_Xietongmen
name
Feb16
Feb17
Feb18
Feb19
Feb20
Feb21
14
12
10
8
6
4

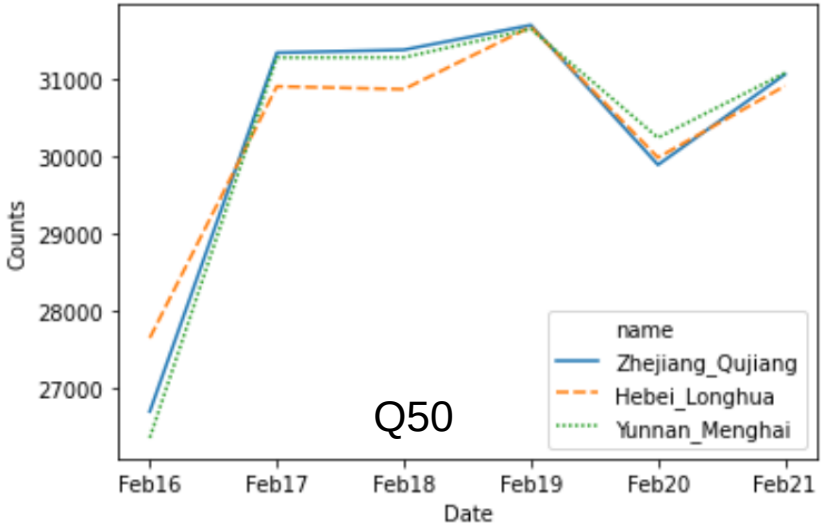
时序变化 (Selected by Quantiles)



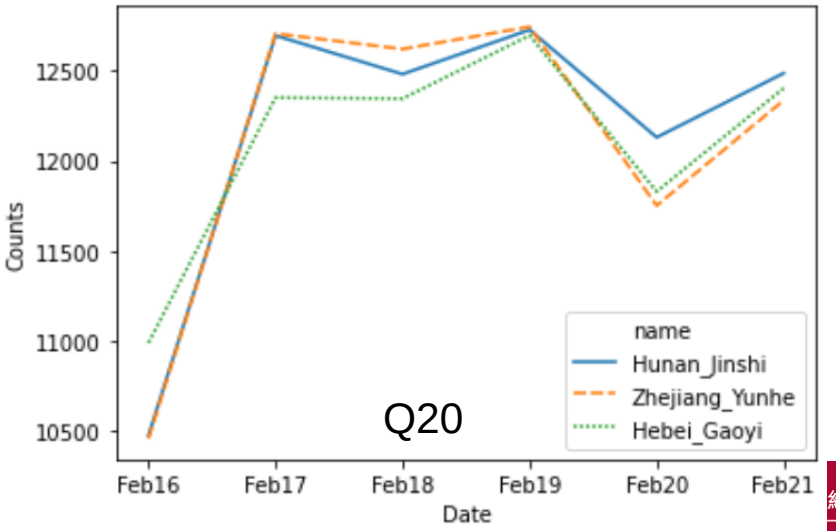
Q100



Q80

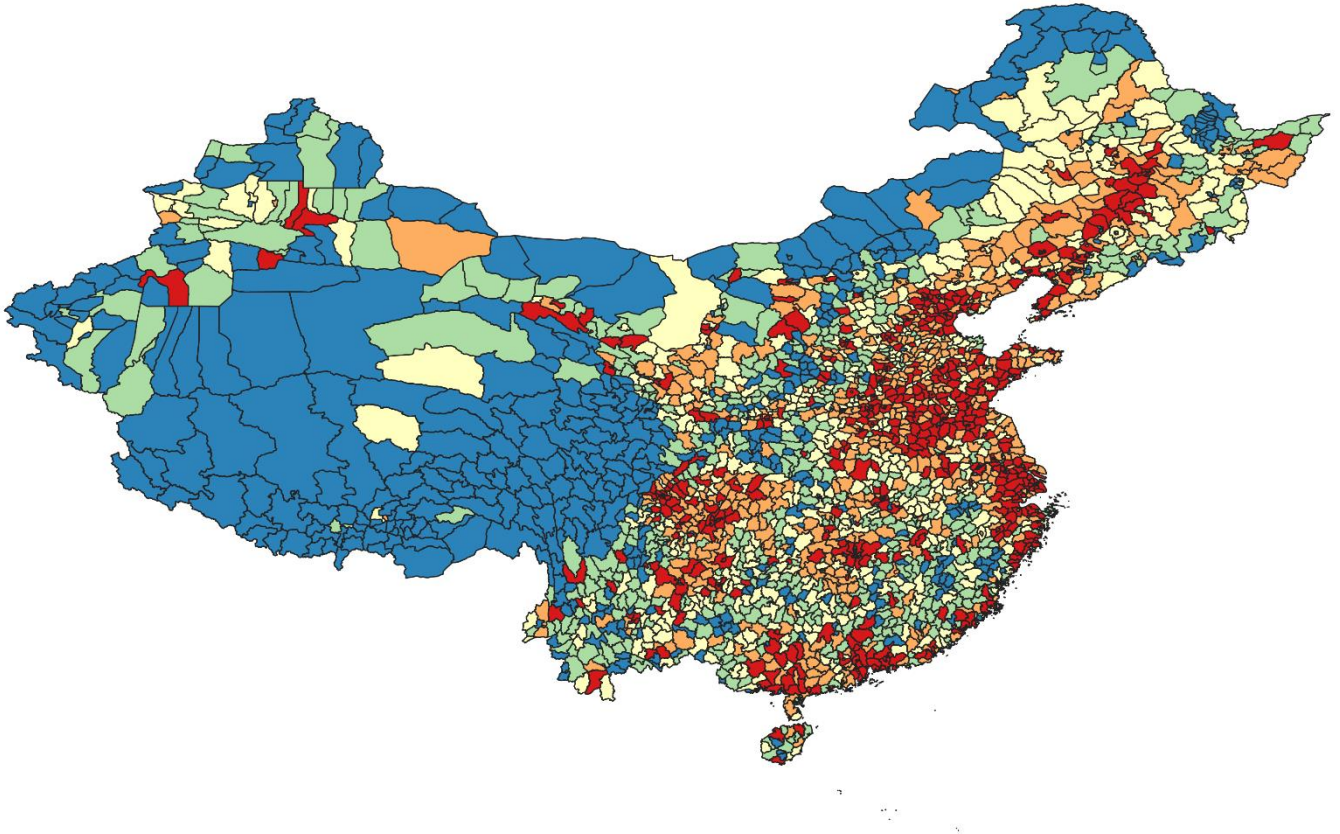


Q50

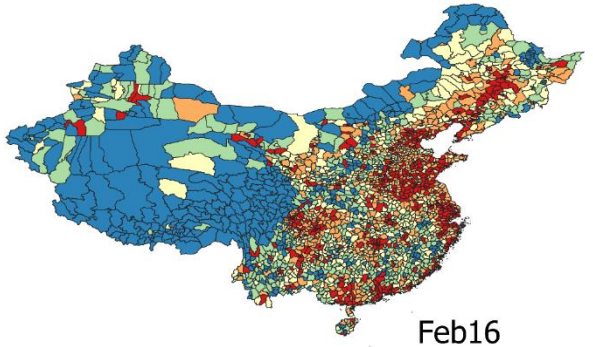


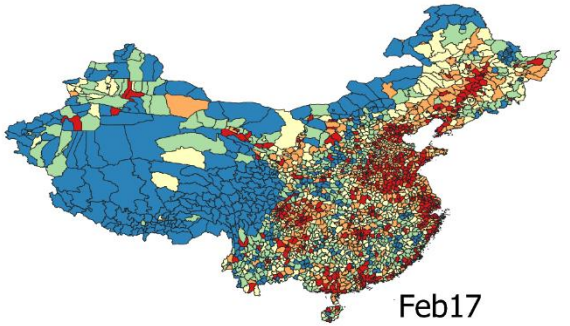
Q20

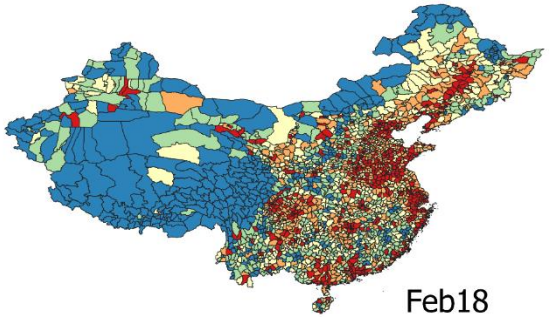
单日总量 (Feb 21)

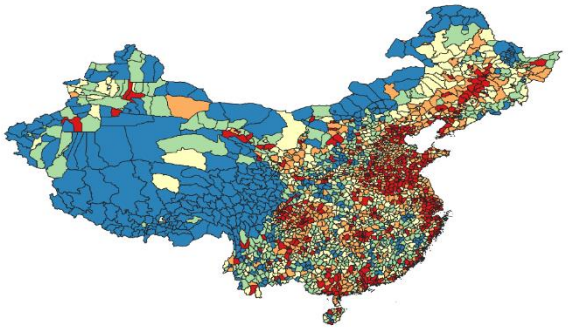


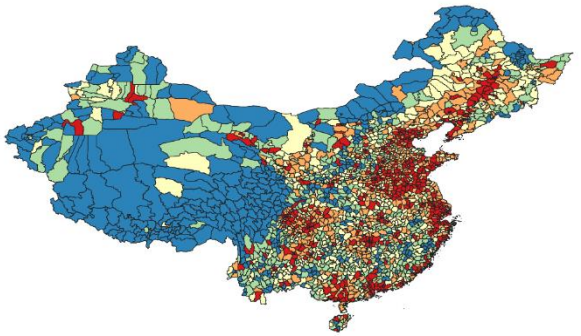
Daily Change

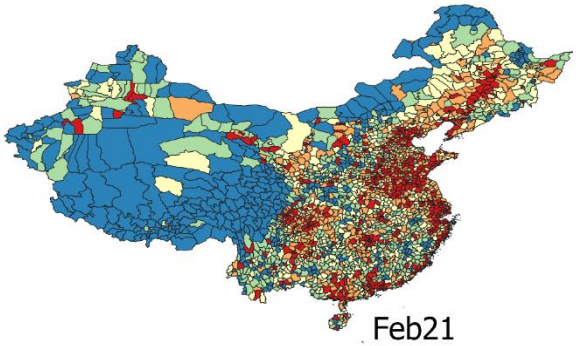

Feb16


Feb17

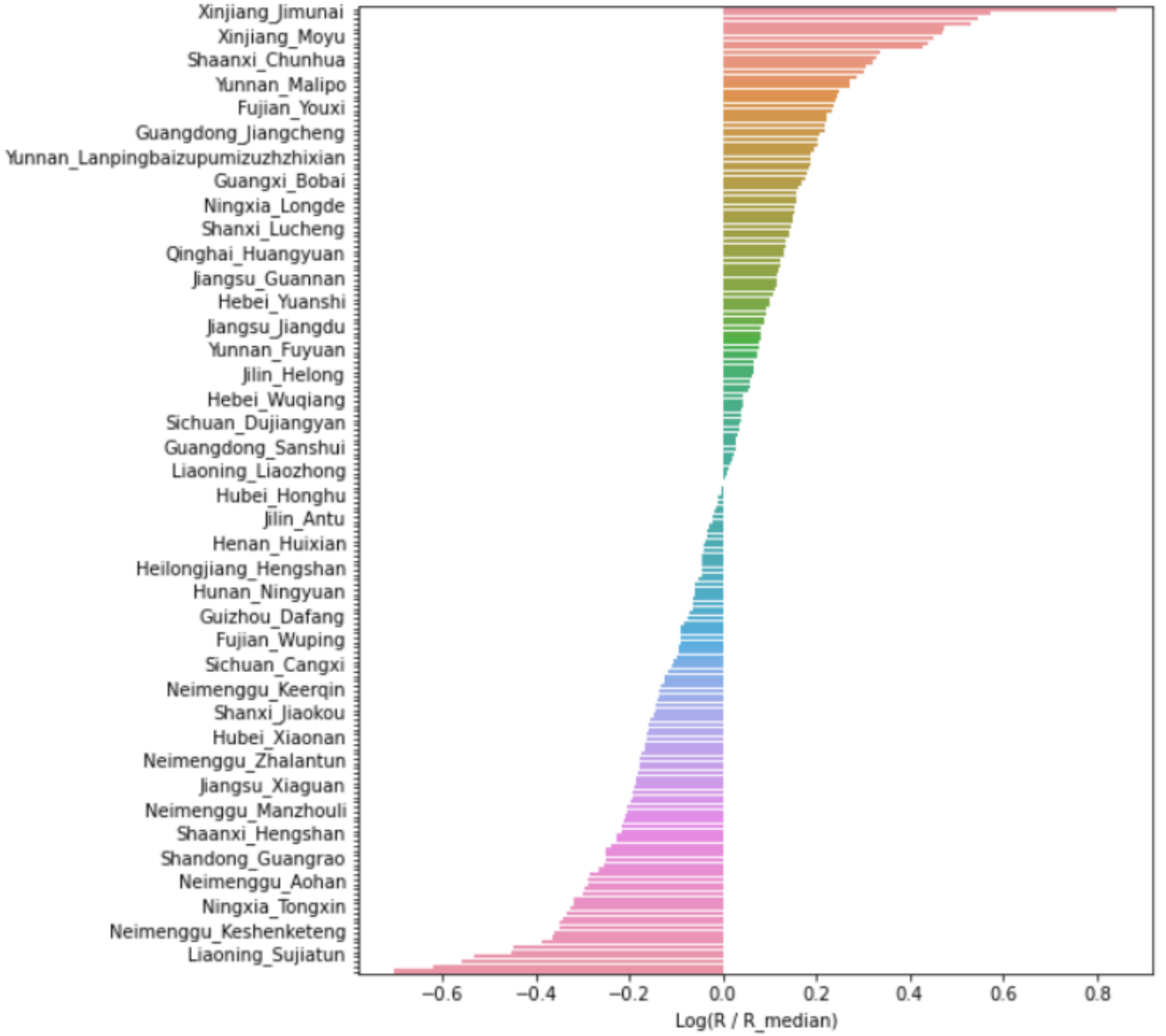

Feb18


Feb19


Feb20


Feb21

Daily Change Rate



$$\left[\left(\frac{f}{s}\right)^{1/y} - 1\right] \times 100$$

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