**Supplementary materials**

**Spatial-temporal clustering of an outbreak of SARS-CoV-2 Delta VOC in Guangzhou, China in 2021**



**Figure S1** Spatial-temporal clustering of all cases before and after the peak of the SARS-CoV-2 outbreak in Guangzhou on April 23–May 4, 2020 (1000 m, 1–14 days).

**Table S1** The strength of spatial-temporal clustering (S) of all case pairs before and after the peak of the epidemic in 2021, Guangzhou, China.

|  |  |
| --- | --- |
| **Time interval (days)** | **Distance between case pairs (meters), 18 May to 31 May 2021** |
| **100** | **200** | **300** | **400** | **500** | **600** | **700** | **800** | **900** | **1000** |
| 1 | 26.14  | 13.39  | 10.84  | 9.36  | 10.26  | 11.00  | 8.89  | 8.59  | 7.76  | 7.17  |
| 2 | 12.09  | 5.87  | 1.36  | 2.92  | 2.58  | 2.63  | 2.98  | 3.93  | 4.24  | 3.72  |
| 3 | 20.14  | 11.86  | 6.51  | 8.19  | 8.77  | 7.23  | 6.50  | 6.76  | 7.06  | 6.73  |
| 4 | 3.19  | 3.39  | 3.61  | 5.39  | 6.36  | 3.85  | 3.21  | 3.27  | 3.43  | 3.64  |
| 5 | 3.56  | 4.88  | 5.29  | 6.05  | 6.62  | 4.29  | 4.17  | 4.00  | 4.26  | 4.46  |
| 6 | 4.02  | 5.46  | 4.58  | 4.81  | 4.88  | 3.73  | 3.91  | 3.98  | 4.10  | 4.26  |
| 7 | 3.61  | 4.55  | 4.61  | 4.84  | 4.78  | 4.43  | 4.53  | 4.59  | 4.62  | 4.66  |
| 8 | 2.83  | 3.02  | 3.08  | 3.17  | 3.21  | 3.10  | 3.13  | 3.15  | 3.16  | 3.17  |
| 9 | 2.43  | 2.43  | 2.43  | 2.43  | 2.43  | 2.43  | 2.43  | 2.43  | 2.43  | 2.43  |
| 10 | 2.14  | 2.14  | 2.14  | 2.14  | 2.14  | 2.14  | 2.14  | 2.14  | 2.14  | 2.14  |
| 11 | 1.72  | 1.72  | 1.72  | 1.72  | 1.72  | 1.72  | 1.72  | 1.72  | 1.72  | 1.72  |
| 12 | 1.26  | 1.26  | 1.26  | 1.26  | 1.26  | 1.26  | 1.26  | 1.26  | 1.26  | 1.26  |
| 13 | 1.02  | 1.02  | 1.02  | 1.02  | 1.02  | 1.02  | 1.02  | 1.02  | 1.02  | 1.02  |
| 14 | 0.32  | 0.32  | 0.32  | 0.32  | 0.32  | 0.32  | 0.32  | 0.32  | 0.32  | 0.32  |
| **Time interval (days)** | **Distance between case pairs (meters), 1 June to 18 June 2021** |
| **100** | **200** | **300** | **400** | **500** | **600** | **700** | **800** | **900** | **1000** |
| 1 | 26.14  | 13.39  | 10.84  | 9.36  | 10.26  | 11.00  | 8.89  | 8.59  | 7.76  | 7.17  |
| 2 | 12.09  | 5.87  | 1.36  | 2.92  | 2.58  | 2.63  | 2.98  | 3.93  | 4.24  | 3.72  |
| 3 | 20.14  | 11.86  | 6.51  | 8.19  | 8.77  | 7.23  | 6.50  | 6.76  | 7.06  | 6.73  |
| 4 | 3.19  | 3.39  | 3.61  | 5.39  | 6.36  | 3.85  | 3.21  | 3.27  | 3.43  | 3.64  |
| 5 | 3.56  | 4.88  | 5.29  | 6.05  | 6.62  | 4.29  | 4.17  | 4.00  | 4.26  | 4.46  |
| 6 | 4.02  | 5.46  | 4.58  | 4.81  | 4.88  | 3.73  | 3.91  | 3.98  | 4.10  | 4.26  |
| 7 | 3.61  | 4.55  | 4.61  | 4.84  | 4.78  | 4.43  | 4.53  | 4.59  | 4.62  | 4.66  |
| 8 | 2.83  | 3.02  | 3.08  | 3.17  | 3.21  | 3.10  | 3.13  | 3.15  | 3.16  | 3.17  |
| 9 | 2.43  | 2.43  | 2.43  | 2.43  | 2.43  | 2.43  | 2.43  | 2.43  | 2.43  | 2.43  |
| 10 | 2.14  | 2.14  | 2.14  | 2.14  | 2.14  | 2.14  | 2.14  | 2.14  | 2.14  | 2.14  |
| 11 | 1.72  | 1.72  | 1.72  | 1.72  | 1.72  | 1.72  | 1.72  | 1.72  | 1.72  | 1.72  |
| 12 | 1.26  | 1.26  | 1.26  | 1.26  | 1.26  | 1.26  | 1.26  | 1.26  | 1.26  | 1.26  |
| 13 | 1.02  | 1.02  | 1.02  | 1.02  | 1.02  | 1.02  | 1.02  | 1.02  | 1.02  | 1.02  |
| 14 | 0.32  | 0.32  | 0.32  | 0.32  | 0.32  | 0.32  | 0.32  | 0.32  | 0.32  | 0.32  |

**Table S2** Changes in strength (S) of spatial-temporal clustering before and after the peak of outbreaks in Guangzhou in 2020 and 2021

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Outbreak | Temporal variable (days) | S-pre | S-post | S-pre | S-post | S-change | S-change rate |
| (Accumulative) | (Accumulative) | (Median) | (Median) |
| 2021 | 1–5 | 332.4 | 203.21 | 5.63 | 4.32 | 129.19 | 38.87% |
|  | 6–10 | 165.65 | 79.04 | 3.14 | 1.45 | 86.61 | 52.28% |
|  | 11–14 | 43.22 | 22.35 | 1.14 | 0.66 | 20.87 | 48.29% |
| 2020 | 1–5 | 279.21 | 195.4 | 5.19 | 4.1 | 83.81 | 30.02% |
|  | 6–10 | 158.86 | 51.09 | 3.2 | 0.99 | 107.77 | 67.84% |
| 　 | 11–14 | 44.04 | 14.7 | 1.14 | 0.54 | 29.34 | 66.62% |

\*S-change rate=100%\*(S-pre – S-post)/ S-pre