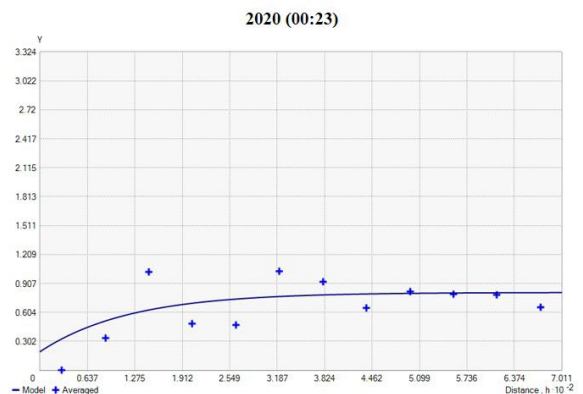
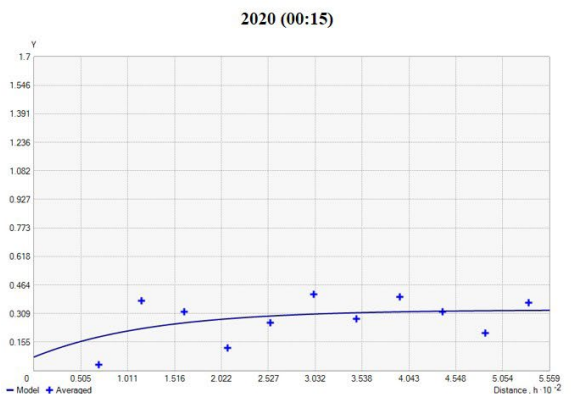
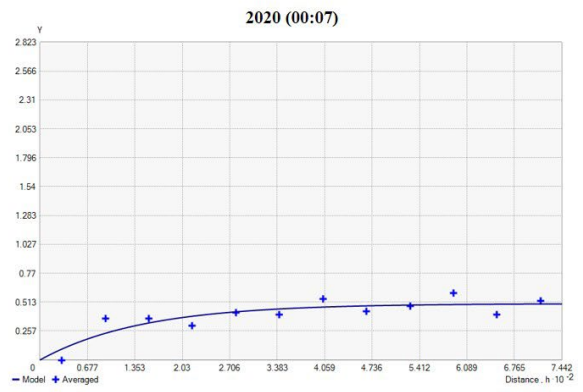
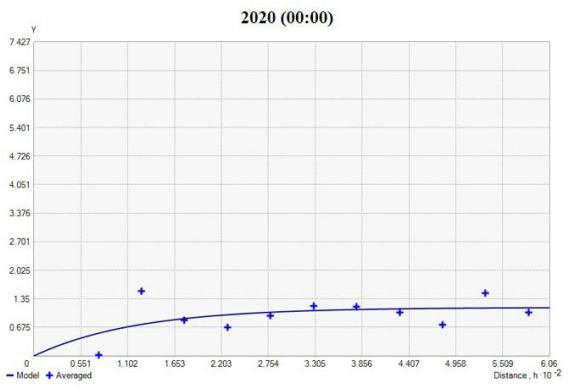
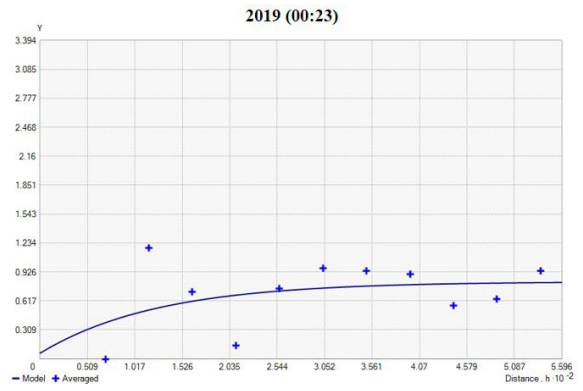
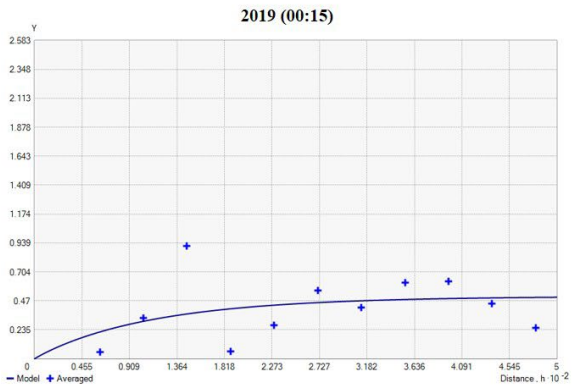
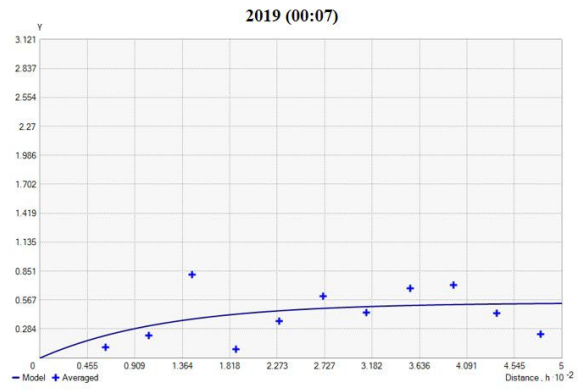
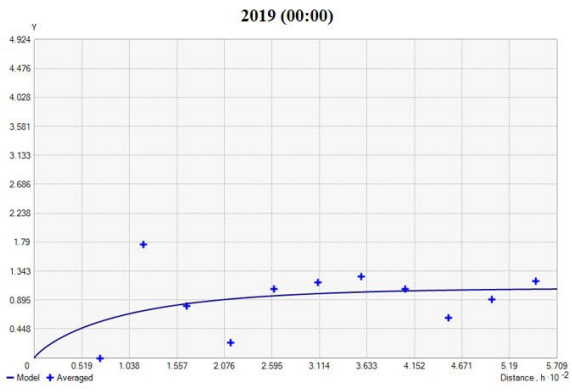


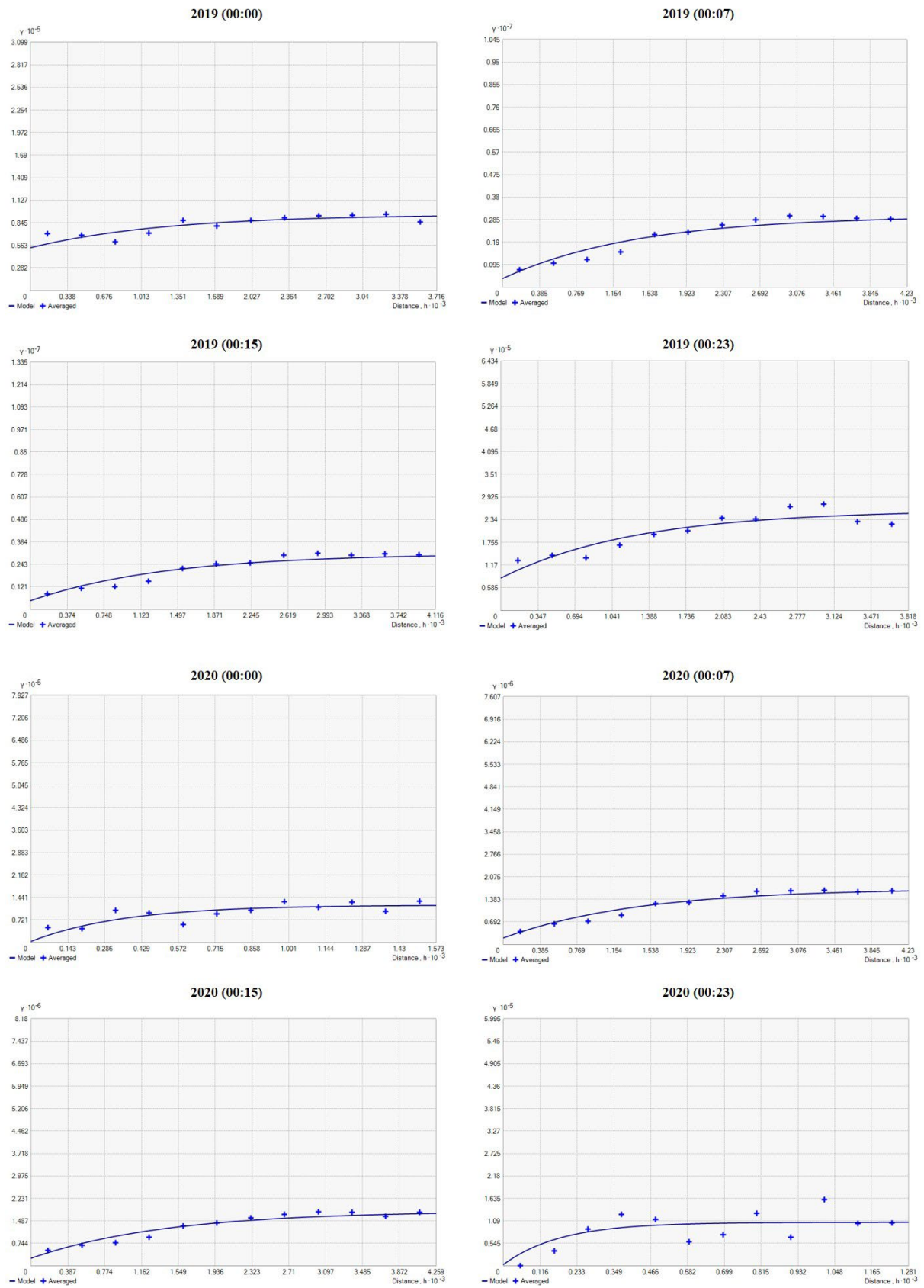
## Supplemental material

**Table S1.** Calculated Moran's I for testing the autocorrelation in the spatial data (values marked with a star are significant at 90% confidence interval and the unmarked ones are significant at 95% confidence interval)

Hours	Euclidean space		Transformed space	
	2019	2020	2019	2020
00:00	0.345	0.354	0.311	0.347
01:00	0.338	0.374	0.435	0.443
02:00	0.398	0.324	0.326	0.349
03:00	0.331	0.302	0.365*	0.358
04:00	0.319*	0.356	0.371	0.335*
05:00	0.529	0.505	0.426	0.401
06:00	0.348	0.336	0.342	0.337
07:00	0.356	0.316	0.378*	0.332*
08:00	0.467	0.484	0.356	0.331
09:00	0.448*	0.463*	0.405*	0.465
10:00	0.303	0.302	0.321	0.387
11:00	0.331	0.349*	0.325	0.320*
12:00	0.326	0.317	0.384	0.381
13:00	0.324*	0.353	0.426	0.438
14:00	0.401	0.451	0.369	0.331
15:00	0.406	0.393*	0.339	0.341
16:00	0.358	0.304	0.479	0.451
17:00	0.405	0.422	0.436	0.331
18:00	0.357	0.362	0.417	0.422
19:00	0.324	0.384	0.335	0.393
20:00	0.334	0.359	0.361	0.341*
21:00	0.374	0.395	0.348	0.354
22:00	0.313*	0.353*	0.329	0.312*
23:00	0.345	0.375	0.353	0.337



**Fig. S1.** Examples of trend analysis for flow data in transformed space in March 2019 and 2020



**Fig. S2.** Examples of trend analysis for flow data in Euclidean space in March 2019 and 2020

**The other data of this study can be available upon reasonable request considering privacy and data sharing policies.**