

Table 2. Comparison of 20 simulated wildfires in ForeFire and the IGS under the metrics of computing time (ForeFire/IGS C++ time) and similarity of the resulting fire line (threat score, where $w_1, w_2 = 1$).

Wildfire	Start points and time (x, y, t) (EPSC:2157, s)	Wind (zonal, meridional) (m s^{-1})	Simulation time (s)	ForeFire runtime (s)	IGS Python runtime (s)	IGS C++ runtime (s)	ForeFire/IGS C++ runtime (s)	ForeFire/IGS C++ runtime (s)	True positives (m^2)	False positives (m^2)	Threat score
1	(715122, 702388, 0)	(0, 0)	100 000	5.3	46	0.193	5.105	27	21 162 353	2 597 119	0.87
2	(713350, 704946, 0)	(0, 0)	100 000	7.1	58	0.321	6.773	22	31 641 462	6 709 658	0.82
3	(715651, 706392, 0)	(0, 0)	100 000	6.9	68	0.267	6.613	26	29 336 486	6 015 675	0.82
4	(710773, 707941, 0)	(0, 0)	100 000	5.9	72	0.294	5.584	20	28 808 953	4 668 653	0.85
5	(713513, 708268, 0)	(0, 0)	100 000	6.6	61	0.256	6.342	26	28 944 866	6 508 166	0.80
6	(712496, 708990, 0)	(0, 0)	100 000	5.9	65	0.314	5.561	19	28 969 212	4 046 505	0.87
7	(715823, 708190, 0)	(0, 0)	100 000	7.1	61	0.289	6.791	24	31 247 060	5 138 147	0.85
8	(713467, 711230, 0)	(0, 0)	100 000	6.3	63	0.291	6.018	22	29 105 672	3 749 638	0.88
9	(714378, 701907, 0)	(0, 0)	100 000	5.5	55	0.238	5.263	23	25 224 112	2 781 007	0.87
10	(704110, 703419, 0)	(0, 0)	100 000	7.2	55	0.257	6.896	28	30 443 340	3 596 271	0.87
11	(709231, 705966, 0)	(0, 0)	50 000	1.8	27	0.072	1.717	25	5 684 170	418 904	0.83
12	(714122, 706378, 0)	(0, 0)	50 000	2.5	26	0.081	2.451	31	6 941 426	482 771	0.85
13	(714027, 716143, 0)	(0, 0)	30 000	1.4	15	0.028	1.394	51	1 701 109	497 978	0.74
14	(713369, 707072, 0)	(0, 0)	120 000	9.9	75	0.371	9.509	27	43 051 154	8 672 817	0.82
15	(715122, 702388, 0) (714868, 704531, 2000)	(0, 0)	20 000	1.7	11	0.043	1.621	39	1 833 936	293 936	0.78
16	(715148, 702437, 0) (715930, 703049, 1200) (715804, 702092, 2700)	(0, 0)	30 000	2.2	14	0.034	2.142	64	3 856 323	398 370	0.78
17	(714633, 704695, 0) (715297, 707714, 0)	(0, 0)	50 000	3.7	27	0.106	3.609	35	13 747 087	3 459 420	0.78
18	(713945, 703907, 0)	(1, 3)	50 000	10.6	31	0.158	10.404	67	42 742 800	25 938 603	0.59
19	(712649, 715686, 0)	(1, -3)	20 000	2.1	11	0.040	2.068	53	4 779 324	1 406 943	0.60
20	(713925, 707395, 0)	(-0.5, -0.4)	30 000	2.0	17	0.043	1.997	47	4 085 839	283 454	0.80
Mean				5.1	43	0.185	4.893	34	20 665 334	4 383 202	0.80
Standard deviation				2.8	23	0.118	2.664	15	13 902 996	5 658 324	0.08
Standard error				0.6	5.1	0.03	0.6	3.3	3 108 804	1 265 240	0.02
Sum									413 306 686	87 664 034	0.80