

Приложение А

В таблице (1):

- max – максимальная длина пути в сотых кг;
- min – минимальная длина пути в сотых кг;
- avg – средняя длина пути в сотых кг.

Таблица 1 — Результаты параметризации муравьиного алгоритма (начало)

Параметры			Граф 1			Граф 2			Граф 3		
α	ρ	Дни	min	max	avg	min	max	avg	min	max	avg
0.1	0.1	5	315.20	349.90	329.00	284.50	322.00	298.20	279.60	344.90	311.71
0.1	0.1	20	282.50	319.70	300.39	240.50	298.65	282.80	266.60	321.60	295.68
0.1	0.1	50	264.50	308.15	288.25	256.50	285.90	273.25	270.00	290.60	281.67
0.1	0.1	100	255.40	270.90	263.22	225.50	264.65	237.72	258.60	277.60	265.01
0.1	0.1	200	250.90	256.50	252.58	225.50	229.50	225.90	258.60	264.90	259.73
0.1	0.3	5	293.50	334.30	321.35	268.50	323.40	303.96	284.60	351.00	312.49
0.1	0.3	20	287.80	320.00	302.79	244.50	297.50	275.83	274.60	312.90	293.65
0.1	0.3	50	250.90	291.20	272.26	225.50	268.50	246.09	263.60	278.00	271.12
0.1	0.3	100	250.90	261.50	256.71	225.50	233.50	228.70	258.60	266.60	261.53
0.1	0.3	200	250.90	259.50	252.32	225.50	233.50	226.70	258.60	263.90	259.83
0.1	0.5	5	282.65	329.80	312.30	271.20	317.00	295.67	284.60	322.75	306.69
0.1	0.5	20	264.50	316.40	290.18	233.50	295.50	270.96	264.60	309.00	288.02
0.1	0.5	50	250.90	289.50	264.32	225.50	274.50	257.12	261.60	284.90	272.70
0.1	0.5	100	250.90	268.50	259.62	229.50	260.65	243.79	258.60	276.90	263.53
0.1	0.5	200	250.90	277.40	256.03	225.50	256.50	237.50	258.60	268.60	261.93
0.1	0.7	5	280.90	335.00	313.47	281.50	318.60	298.45	274.60	326.60	309.70
0.1	0.7	20	266.90	308.30	290.98	268.50	294.15	279.37	271.60	311.60	285.94
0.1	0.7	50	264.50	307.60	283.73	237.50	285.90	267.33	264.00	298.15	279.43
0.1	0.7	100	256.50	284.50	271.25	225.50	270.65	250.17	259.60	282.00	270.56
0.1	0.7	200	250.90	280.50	266.14	225.50	261.50	245.48	258.60	281.60	265.45
0.1	0.9	5	284.50	337.70	309.39	283.65	321.70	299.85	285.60	333.00	311.65
0.1	0.9	20	281.65	311.80	296.47	229.50	305.00	280.80	282.60	307.15	295.02
0.1	0.9	50	250.90	298.65	282.63	261.35	284.50	269.87	269.90	297.60	282.57
0.1	0.9	100	255.40	295.80	276.23	233.50	275.50	260.02	263.90	286.60	275.55
0.1	0.9	200	262.90	291.40	276.05	253.90	280.50	263.05	259.60	281.00	270.61
0.3	0.1	5	297.55	332.95	315.55	275.65	315.00	289.78	290.60	332.00	308.48
0.3	0.1	20	279.70	306.65	293.92	262.50	300.50	277.90	270.90	299.30	286.18
0.3	0.1	50	256.50	300.50	279.90	253.90	271.50	262.61	267.60	286.60	276.80

Таблица 1 — Результаты параметризации муравьиного алгоритма (продолжение)

Параметры			Граф 1			Граф 2			Граф 3		
α	ρ	Дни	min	max	avg	min	max	avg	min	max	avg
0.3	0.1	100	250.90	271.80	256.58	225.50	229.50	226.30	258.60	266.90	261.79
0.3	0.1	200	250.90	250.90	250.90	225.50	233.50	226.30	258.60	259.60	259.00
0.3	0.3	5	292.50	323.70	305.96	267.50	304.00	288.94	284.75	337.40	305.75
0.3	0.3	20	278.50	326.00	296.58	261.65	289.90	274.30	262.60	294.60	280.10
0.3	0.3	50	250.90	269.65	257.86	225.50	233.50	229.90	258.60	277.00	264.53
0.3	0.3	100	250.90	256.50	253.93	225.50	229.50	226.30	258.60	264.60	259.50
0.3	0.3	200	250.90	250.90	250.90	225.50	233.50	226.30	258.60	261.60	258.90
0.3	0.5	5	274.90	324.90	309.45	262.50	305.50	287.37	280.60	332.30	306.89
0.3	0.5	20	256.50	308.10	283.92	247.50	275.90	265.16	270.60	294.60	283.14
0.3	0.5	50	259.50	271.40	265.27	225.50	260.50	239.94	258.60	271.60	264.23
0.3	0.5	100	250.90	270.90	258.82	225.50	240.50	230.20	258.60	271.60	262.10
0.3	0.5	200	250.90	256.50	252.81	225.50	233.50	226.30	258.60	259.60	258.80
0.3	0.7	5	278.50	337.50	317.48	258.50	314.70	289.36	281.60	318.75	299.82
0.3	0.7	20	262.90	300.50	290.43	233.50	271.20	260.71	266.90	301.00	280.55
0.3	0.7	50	250.90	295.45	269.25	225.50	264.65	246.01	264.60	282.60	273.60
0.3	0.7	100	250.90	279.50	263.76	225.50	260.50	245.30	259.60	277.90	267.90
0.3	0.7	200	250.90	266.90	257.89	225.50	237.50	229.10	258.60	266.60	261.23
0.3	0.9	5	287.90	325.30	311.46	258.50	314.50	290.89	266.90	355.00	301.70
0.3	0.9	20	274.90	311.40	292.02	244.50	284.65	267.85	274.60	309.40	290.19
0.3	0.9	50	259.50	297.00	280.32	254.50	274.50	264.18	258.60	285.60	274.21
0.3	0.9	100	250.90	279.90	270.70	229.50	270.50	252.53	259.60	279.60	270.04
0.3	0.9	200	250.90	280.00	262.61	233.50	261.65	244.09	258.60	275.45	266.25
0.5	0.1	5	289.50	333.50	306.34	246.50	296.35	280.01	282.90	318.00	298.58
0.5	0.1	20	275.50	307.80	293.00	256.50	270.50	264.66	265.60	299.60	280.80
0.5	0.1	50	250.90	297.80	272.01	229.50	268.90	254.84	263.60	276.90	270.36
0.5	0.1	100	250.90	260.50	253.43	225.50	233.50	226.70	258.60	264.90	260.26
0.5	0.1	200	250.90	250.90	250.90	225.50	225.50	225.50	258.60	261.60	259.10
0.5	0.3	5	288.10	328.15	304.73	251.50	296.35	269.70	264.90	298.30	286.74
0.5	0.3	20	259.50	304.90	289.17	250.50	275.50	265.76	270.00	290.60	281.81
0.5	0.3	50	250.90	271.80	257.18	225.50	256.50	233.84	258.60	266.60	262.76
0.5	0.3	100	250.90	250.90	250.90	225.50	225.50	225.50	258.60	258.60	258.60
0.5	0.3	200	250.90	250.90	250.90	225.50	225.50	225.50	258.60	258.60	258.60
0.5	0.5	5	279.40	330.80	312.59	256.50	293.65	272.52	272.60	314.60	295.36
0.5	0.5	20	250.90	294.50	275.31	233.50	283.65	258.43	258.60	281.60	266.94

Таблица 1 — Результаты параметризации муравьиного алгоритма (продолжение)

Параметры			Граф 1			Граф 2			Граф 3		
α	ρ	Дни	min	max	avg	min	max	avg	min	max	avg
0.5	0.5	50	255.40	263.90	258.91	225.50	254.50	232.60	258.60	268.00	261.37
0.5	0.5	100	250.90	255.40	251.80	225.50	233.50	226.30	258.60	263.60	260.00
0.5	0.5	200	250.90	256.50	252.36	225.50	225.50	225.50	258.60	264.60	259.20
0.5	0.7	5	291.80	318.50	304.62	233.50	306.00	278.78	265.60	304.75	288.65
0.5	0.7	20	259.50	294.00	275.38	225.50	276.65	252.62	267.60	286.75	274.94
0.5	0.7	50	250.90	279.70	265.57	225.50	261.65	240.06	261.60	275.60	266.62
0.5	0.7	100	250.90	263.90	256.24	225.50	237.50	229.50	258.60	264.90	261.36
0.5	0.7	200	250.90	262.90	255.48	225.50	233.50	228.30	258.60	263.60	259.40
0.5	0.9	5	279.50	345.90	304.44	261.65	286.65	275.63	282.60	323.00	300.30
0.5	0.9	20	263.90	303.00	286.28	233.50	265.65	247.25	264.60	299.60	277.34
0.5	0.9	50	250.90	291.20	268.88	229.50	261.35	250.14	258.60	268.00	263.58
0.5	0.9	100	255.40	283.50	265.24	225.50	260.00	239.74	258.60	276.60	266.50
0.5	0.9	200	250.90	264.50	258.22	225.50	247.50	230.50	258.60	268.75	262.01
0.7	0.1	5	277.50	323.70	300.09	269.65	294.00	281.38	259.60	298.75	283.19
0.7	0.1	20	273.70	297.70	286.07	229.50	276.00	255.37	258.60	292.00	272.84
0.7	0.1	50	256.50	287.50	274.65	225.50	261.65	245.93	259.60	277.60	269.24
0.7	0.1	100	250.90	256.50	252.02	225.50	225.50	225.50	258.60	261.60	259.20
0.7	0.1	200	250.90	250.90	250.90	225.50	225.50	225.50	258.60	258.60	258.60
0.7	0.3	5	284.80	327.40	304.04	260.65	290.50	275.73	263.60	310.00	284.59
0.7	0.3	20	255.40	304.80	286.64	225.50	266.65	248.57	259.60	285.60	274.83
0.7	0.3	50	250.90	260.50	252.31	225.50	233.50	227.50	258.60	264.90	259.53
0.7	0.3	100	250.90	250.90	250.90	225.50	225.50	225.50	258.60	261.60	259.20
0.7	0.3	200	250.90	250.90	250.90	225.50	225.50	225.50	258.60	258.60	258.60
0.7	0.5	5	256.50	311.90	299.19	240.50	287.65	270.86	270.60	305.60	287.89
0.7	0.5	20	250.90	289.90	275.99	225.50	256.50	235.44	265.60	274.60	270.67
0.7	0.5	50	250.90	260.50	253.73	225.50	233.50	226.30	258.60	263.90	260.86
0.7	0.5	100	250.90	264.50	252.82	225.50	225.50	225.50	258.60	261.60	259.10
0.7	0.5	200	250.90	250.90	250.90	225.50	225.50	225.50	258.60	258.60	258.60
0.7	0.7	5	281.50	317.00	304.15	233.50	283.65	261.70	274.60	301.90	286.21
0.7	0.7	20	250.90	281.80	269.50	229.50	264.90	246.14	261.60	277.90	269.21
0.7	0.7	50	250.90	270.90	259.27	225.50	250.50	231.90	258.60	272.75	262.93
0.7	0.7	100	250.90	264.50	253.27	225.50	225.50	225.50	258.60	259.60	258.90
0.7	0.7	200	250.90	255.40	251.35	225.50	225.50	225.50	258.60	262.60	259.50
0.7	0.9	5	250.90	305.80	290.71	256.50	285.50	268.86	274.75	305.60	291.43

Таблица 1 — Результаты параметризации муравьиного алгоритма (продолжение)

Параметры			Граф 1			Граф 2			Граф 3		
α	ρ	Дни	min	max	avg	min	max	avg	min	max	avg
0.7	0.9	20	256.50	295.90	275.31	225.50	264.65	248.53	265.60	290.30	274.67
0.7	0.9	50	255.40	268.60	262.14	225.50	260.65	238.81	263.60	275.60	269.37
0.7	0.9	100	250.90	277.40	260.16	225.50	256.50	232.20	259.60	274.30	266.36
0.7	0.9	200	250.90	271.40	257.34	225.50	237.50	227.90	258.60	270.60	261.70
0.9	0.1	5	266.90	307.70	291.68	260.50	284.50	270.30	259.60	304.00	282.17
0.9	0.1	20	250.90	295.20	276.86	225.50	263.50	247.12	262.60	276.00	271.68
0.9	0.1	50	255.40	271.50	265.75	225.50	258.00	236.94	261.60	270.90	265.63
0.9	0.1	100	250.90	261.50	252.82	225.50	225.50	225.50	258.60	263.60	259.10
0.9	0.1	200	250.90	250.90	250.90	225.50	225.50	225.50	258.60	258.60	258.60
0.9	0.3	5	261.50	307.20	286.43	233.50	286.65	259.69	263.90	297.60	280.80
0.9	0.3	20	264.50	287.40	273.69	233.50	262.50	248.43	258.60	278.00	268.05
0.9	0.3	50	250.90	256.50	251.46	225.50	225.50	225.50	258.60	263.60	259.60
0.9	0.3	100	250.90	250.90	250.90	225.50	225.50	225.50	258.60	258.60	258.60
0.9	0.3	200	250.90	250.90	250.90	225.50	225.50	225.50	258.60	258.60	258.60
0.9	0.5	5	277.40	312.55	291.90	233.50	282.50	268.71	273.60	303.00	287.48
0.9	0.5	20	250.90	278.50	262.20	225.50	265.50	236.00	261.60	271.60	266.83
0.9	0.5	50	250.90	261.50	252.41	225.50	233.50	226.30	258.60	262.60	259.10
0.9	0.5	100	250.90	250.90	250.90	225.50	225.50	225.50	258.60	258.60	258.60
0.9	0.5	200	250.90	250.90	250.90	225.50	225.50	225.50	258.60	258.60	258.60
0.9	0.7	5	268.50	301.50	289.83	229.50	290.35	271.37	261.60	308.60	282.49
0.9	0.7	20	255.40	280.00	270.70	225.50	266.50	241.64	258.60	274.60	266.09
0.9	0.7	50	250.90	268.50	255.92	225.50	256.50	230.60	258.60	265.60	260.40
0.9	0.7	100	250.90	259.50	253.18	225.50	225.50	225.50	258.60	262.60	260.00
0.9	0.7	200	250.90	250.90	250.90	225.50	225.50	225.50	258.60	259.60	259.10
0.9	0.9	5	259.50	309.30	286.27	229.50	282.50	259.01	259.60	301.00	283.90
0.9	0.9	20	259.50	290.90	274.05	225.50	260.65	249.44	258.60	274.75	268.12
0.9	0.9	50	255.40	280.50	267.60	225.50	256.50	235.70	258.60	263.90	260.76
0.9	0.9	100	250.90	264.50	257.15	225.50	233.50	227.90	258.60	265.60	262.76
0.9	0.9	200	250.90	259.50	254.08	225.50	225.50	225.50	258.60	261.60	260.20