

**Recherche de la meilleure valeur pour maxiter:**

Code	( 100 % , 90 % , 80 % )
(GF(2),96,32)	(23, 8, 6), (23, 9, 7), (21, 8, 6), (20, 8, 6), (1, 1, 1),
(GF(3),96,32)	(10, 4, 1), (10, 4, 3), (1, 1, 1),
(GF(4),96,32)	(8, 3, 1), (1, 1, 1),
(GF(5),96,32)	(7, 3, 1), (6, 3, 1), (1, 1, 1),
(GF(2),99,33)	(27, 8, 6), (22, 9, 7), (21, 9, 6), (1, 1, 1),
(GF(3),99,33)	(15, 4, 3), (13, 4, 3), (11, 4, 3), (10, 4, 3), (1, 1, 1),
(GF(4),99,33)	(9, 3, 1), (7, 3, 1), (1, 1, 1),
(GF(5),99,33)	(6, 3, 1), (1, 1, 1),
(GF(2),128,32)	(28, 8, 6), (27, 8, 6), (22, 8, 6), (21, 8, 6), (1, 1, 1),
(GF(3),128,32)	(12, 4, 3), (12, 4, 1), (1, 1, 1),
(GF(4),128,32)	(9, 3, 1), (8, 3, 1), (7, 3, 1), (1, 1, 1),
(GF(5),128,32)	(6, 3, 1), (1, 1, 1),
(GF(2),60,15)	(23, 8, 6), (20, 8, 6), (19, 8, 6), (1, 1, 1),
(GF(3),60,15)	(14, 4, 1), (11, 4, 3), (10, 4, 3), (9, 4, 3), (1, 1, 1),
(GF(4),60,15)	(10, 3, 1), (9, 4, 3), (8, 3, 1), (7, 4, 3),
(GF(5),60,15)	(8, 3, 1), (7, 3, 1), (6, 3, 1), (1, 1, 1),
(GF(2),68,17)	(30, 8, 6), (26, 8, 7), (25, 8, 6), (24, 8, 6), (21, 8, 6), (22, 8, 6)
(GF(3),68,17)	(11, 4, 3), (11, 5, 4), (9, 4, 3), (1, 1, 1),
(GF(4),68,17)	(10, 4, 3), (9, 4, 3), (1, 1, 1),
(GF(5),68,17)	(9, 3, 1), (7, 3, 1), (1, 1, 1)
(GF(2),36,9)	(30, 8, 6), (26, 8, 6), (25, 9, 7), (25, 8, 6), (22, 9, 7), (21, 9, 7), (1, 1, 1),
(GF(2),40,10)	(26, 8, 6), (21, 8, 6), (20, 7, 6), (19, 8, 6), (1, 1, 1),
(GF(2), 32, 8)	(34, 13, 10), (32, 9, 7), (28, 10, 7), (26, 8, 6), (25, 10, 7), (21, 8, 6), (1, 1, 1),
(GF(2),35,6)	(6, 3, 2), (4, 2, 1), (1, 1, 1),
(GF(2), 96, 32)	(24, 8, 6), (22, 8, 6), (21, 8, 6), (20, 9, 6), (1, 1, 1),

(GF(2), 44, 11)	(28, 10, 7), (27, 9, 7), (22, 9, 6), (21, 7, 6), (20, 8, 6), (19, 8, 6)
(GF(2), 111, 11)	(13, 4, 3), (10, 4, 3), (10, 4, 1), (9, 4, 3), (1, 1, 1),
(GF(2), 99, 33)	(32, 8, 6), (29, 8, 6), (28, 9, 6), (25, 8, 6), (24, 9, 6), (24, 8, 6), (22, 8, 6), (20, 8, 6),
(GF(2), 111, 33)	(1, 1, 1)
(GF(2), 48, 12)	(28, 9, 7), (22, 8, 6), (21, 9, 7), (20, 8, 6), (19, 8, 6), (1, 1, 1)
(GF(2), 60, 14)	(4, 2, 1), (1, 1, 1),
(GF(2), 100, 14)	(7, 3, 1), (6, 3, 1), (5, 3, 1), (1, 1, 1),
(GF(2), 100, 20)	(33, 8, 6), (30, 8, 6), (23, 8, 6), (22, 9, 7), (22, 8, 6), (20, 8, 6), (19, 8, 6), (1, 1, 1),
(GF(2), 100, 25)	(34, 8, 6), (29, 8, 6), (28, 8, 6), (27, 8, 6), (26, 8, 6), (25, 8, 6), (20, 8, 6), (1, 1, 1),
(GF(2), 95, 25)	(1, 1, 1)
(GF(2), 195, 13)	(32, 8, 6), (30, 8, 6), (26, 8, 6), (25, 8, 6), (23, 8, 6), (22, 9, 6), (21, 8, 6), (1, 1, 1),
(GF(2), 200, 22)	(7, 3, 1), (6, 3, 2), (6, 3, 1), (1, 1, 1),
(GF(2), 78, 11)	(13, 4, 3), (11, 4, 3), (10, 4, 3), (9, 4, 3), (8, 4, 3), (1, 1, 1),
(GF(2), 500, 100)	(38, 8, 6), (26, 8, 6), (23, 8, 6), (22, 8, 6), (21, 8, 6), (1, 1, 1),
(GF(2), 300, 60)	(32, 8, 6), (30, 8, 6), (22, 8, 6), (21, 8, 6), (18, 8, 6), (1, 1, 1),
(GF(2), 123, 13)	(3, 2, 1), (1, 1, 1),

On prend  $\max_{iter} = 20$

**Comparaison du temps d'exécution entre minimum\_distance, Brouwer et Zimmerman:**

Code	minimum_distance	Zimmerman
(GF(13), 58, 6)	2.19 s	1min = 60 s
(GF(25), 28, 5)	3.64 s	10.8 s
(GF(5), 44, 15)	> 20 min = 1200	5min 19s = 319 s
(GF(3), 50, 13)	1.04 s	1.16 s
(GF(3), 73, 15)	9.22 s	26.1 s
(GF(2), 111, 33)	4min 33s = 273 s	51.9 s

(GF(4),73,15)	8min 20s = 500 s	13min 52s = 832 s
(GF(4), 73, 11)	2.23 s	37.1 s
(GF(3), 49, 17)	1min 12s = 72 s	11 s
(GF(9), 44, 9)	2min 24s = 144 s	2min 13s = 133 s
(GF(4), 51, 16)	30min 15s = 1815 s	2min 34s = 154 s
(GF(5), 55, 12)	1min 50s = 110 s	4min 26s = 266 s
(GF(3), 80, 17)	1min 25s = 85 s	3min 17s = 197 s
(GF(2), 135, 32)	2min 37s = 157 s	3min 5s = 185 s
(GF(9), 47, 10)	22min 33s = 1353 s	12min 37s = 757 s
(GF(2), 128, 32)	2min 19s = 139 s	48.1 s
(GF(7), 31, 8)	3.76 s	2.18 s
(GF(7), 96, 32)		
(GF(9), 34, 9)	2min 11s = 131 s	40.4 s
(GF(7),39,10)	1min 51s = 111 s	35.3 s
(GF(11),44,8)	1min 18s = 78 s	5min 41s = 341 s
(GF(7),49,10)	2min 2s = 122 s	3min 13s = 193 s
(GF(7),34,7)	433 ms = 0,433 s	1.05 s
(GF(7),36,9)	15.2 s	11.5 s
(GF(7),36,11)	12min 18s = 738 s	2min 31s = 151 s
(GF(4), 51, 16)	30min 13s = 1813 s	1min 48s = 108 s
(GF(8),39,10)	5min 57s = 357 s	1min 19s = 79 s

<i>Code</i>	<i>minimum_distance (s)</i>	<i>Zimmerman (s)</i>	<i>minimum_distance/Zimmerman</i>
(GF(13),58,6)	2,19	60	0,0365
(GF(4), 73, 11)	2,23	37,1	0,060107817

(GF(11),44,8)	78	341	0,2287390029
(GF(25),28,5)	3,64	10,8	0,337037037
(GF(3), 73, 15)	9,22	26,1	0,353256705
(GF(7),34,7)	0,433	1,05	0,4123809524
(GF(5), 55, 12)	110	266	0,4135338346
(GF(3), 80, 17)	85	197	0,4314720812
(GF(4),73,15)	500	832	0,6009615385
(GF(7),49,10)	122	193	0,6321243523
(GF(2), 135, 32)	157	185	0,8486486486
(GF(3), 50, 13)	1,04	1,16	0,896551724
(GF(9), 44, 9)	144	133	1,082706767
(GF(7),36,9)	15,2	11,5	1,32173913
(GF(5), 43, 12)	102	61	1.6721311475
(GF(7), 31, 8)	3,76	2,18	1,724770642
(GF(9), 47, 10)	1353	757	1,787318362
(GF(2), 128, 32)	139	48,1	2,88981289
(GF(7),39,10)	111	35,3	3,144475921
(GF(9), 34, 9)	131	40,4	3,242574257
(GF(5),44,15)	1200	319	3,761755486
(GF(8),39,10)	357	79	4,518987342
(GF(7),36,11)	738	151	4,887417219
(GF(2),111,33)	273	51,9	5,260115607
(GF(3), 49, 17)	72	11	6,545454545
(GF(4), 51, 16)	1813	108	16,78703704

[illegible]