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A

Códigos Curtos de Cobertura

Os melhores códigos obtidos pelos experimentos para as instâncias do problema de códigos curtos de cobertura, cujos resultados foram apresentados no capítulo 6, são apresentados abaixo. Note que $\mathbb{F}_3$ corresponde a $\mathbb{Z}_3$. Ao invés da notação padrão $\mathbb{F}_4 = \{0, 1, w, w+1\}$, onde $w^2 = w + 1$, foi considerado $\mathbb{F}_4 = \{0, 1, 2, 3\}$, onde os símbolos seguem as regras de multiplicação: $0.x = 0$ e $1.x = x$ para todo x, $2.2 = 3$, $3.3 = 2$, e $2.3 = 3.2 = 1$.

Lista para $q = 3$:

$c_3(5, 1) \leq 13$

00112 01011 01120 01202 10111 12010 12201 20001 20110 21211
22012 22121 22200

$c_3(6, 1) \leq 37$

000122 001002 001110 010020 010202 010220 011012 011021 011121 011221
012011 021011 021200 101020 102111 102202 110001 110210 111102 112022
112111 112210 120220 120221 120222 121011 121102 121112 122000 122111
200021 200200 201212 202102 212211 220210 222120

$c_3(6, 2) \leq 8$

021022 022210 100112 101201 211010 212222 220101 221212

$c_3(7, 1) \leq 93$

0000001 0001221 0002020 0002211 0010020 0011111 0012200 0020011 0020012 0021000
0021200 0022121 0100222 0101010 0101101 0102020 0102101 0110110 0111002 0120201
0121021 0121112 0122002 0200100 0200121 0210210 0211120 0220102 0221022 0221211
0222110 1001111 1002000 1002002 1010000 1010112 1010211 1011010 1011102 1011201
1012021 1012220 1020202 1022011 1101022 1102110 1102221 1110000 1111121 1112202
1112212 1120022 1121001 1121112 1201100 1202122 1202210 1211010 1212020 1212101
1220021 1220110 1222200 2000010 2000110 2000210 2001002 2002121 2010202 2011020
2011021 2012010 2012110 2012210 2100021 2100102 2102012 2111211 2112001 2112122
2120000 2120111 2121222 2122111 2200022 2200201 2202100 2210120 2211112 2211200
2220212 2221211 2222020

$c_3(7, 2) \leq 17$

0002211 0011021 0012110 0101010 0110222 0122101 1020101 1122200 1220210 2002010
2022111 2100221 2111212 2120022 2201201 2212222 2221002

$c_3(7, 3) \leq 6$

0001000 0002120 1100222 1112012 1120112 2222201

Lista para $q = 4$:

$c_4(4, 1) \leq 10$

0010	0112	1101	1211	1220	1302	2031	2213	3132	3232

$c_4(5, 2) \leq 5$

01022	10132	11110	21231	23202

$c_4(6, 1) \leq 85$

000333	002132	002310	003031	003302	011001	012212	012303	020021	020312
022113	022220	022331	023010	030210	030301	031313	032011	032100	032233
032322	101013	101132	101221	101300	102323	103312	110033	110112	111002
111123	111311	112213	112332	113303	120313	121031	121110	122220	122301
123102	123211	132122	132310	133321	200112	201230	201311	203010	203222
203303	210331	211300	212030	212111	212202	212323	213001	213312	220130
220302	221020	221212	223032	230000	230313	231031	233023	233211	300011
300130	300302	302003	310313	312220	313102	313211	320033	320201	320320
322021	322332	331300	332111	333120					

$c_4(6, 2) \leq 17$

001133	010013	011230	012301	100223	101031	102100
110201	110320	112113	113002	121212	122121	123333
131020	132132	133311				

$c_4(7, 1) \leq 341$

0000331	0001011	0001103	0002130	0002313	0010232	0011002	0011113	0012033	0013021
0013312	0020202	0021210	0030030	0030212	0031133	0031200	0031311	0032102	0033110
0033223	0100032	0100120	0100211	0101131	0101312	0102102	0102233	0103001	0110133
0113231	0120001	0120110	0120223	0121013	0121320	0122200	0122311	0130023	0130201
0131031	0131120	0132000	0132111	0133012	0133103	0200101	0201110	0201221	0201333
0202300	0203132	0210120	0210213	0212103	0212321	0220033	0220122	0221021	0221203
0222101	0222323	0223002	0223220	0231232	0231323	0232312	0233033	0233211	0301030
0303012	0310221	0312020	0312202	0313301	0321111	0321222	0322120	0322213	0330100
0331112	0331221	0332210	0333020	0333313	1000013	1000322	1003020	1003132	1003311
1010221	1011011	1011322	1012020	1012131	1013032	1013123	1013210	1020302	1021132
1022321	1023111	1030022	1030133	1030200	1030311	1031303	1032110	1032332	1033102
1033231	1033320	1100223	1102022	1102133	1102200	1103030	1110103	1110321	1112302
1113023	1113132	1120131	1120313	1121210	1122221	1123100	1130211	1130300	1132010
1132323	1133113	1133220	1201320	1202201	1210022	1210133	1210200	1211121	1213013
1213320	1220010	1220101	1222300	1230322	1231003	1231330	1233131	1233313	1301131
1302233	1303330	1310031	1310302	1311132	1311201	1312230	1312321	1313000	1313222
1322131	1322313	1323301	1330101	1330232	1332033	1332300	1333203	2001301	2003012
2003231	2011021	2013002	2013331	2020001	2020110	2022311	2023121	2023303	2031000
2032031	2032120	2033023	2033201	2033310	2100013	2100322	2102031	2102123	2102300
2103203	2110020	2111123	2112003	2112112	2112221	2113233	2121222	2123023	2123201
2130001	2130110	2130223	2130332	2131013	2131320	2132022	2132200	2132311	2200113
2200220	2201101	2202021	2202130	2202203	2202312	2203122	2210011	2211112	2212032
2212210	2212301	2220310	2221120	2222000	2223012	2230303	2231022	2231133	2232102
2232231	2233110	2233223	2301103	2301320	2302201	2303033	2310200	2310311	2311303
2312332	2313102	2313231	2313320	2320122	2321312	2322010	2322101	2322323	2323113
2330313	2331032	2331123	2331210	2331301	2332003	2332112	2332330	2333233	3000120
3000303	3001131	3001200	3003001	3003113	3003222	3003330	3010023	3010132	3010310
3012111	3012222	3013103	3023020	3023131	3023313	3030331	3032203	3033300	3100000
3100112	3100223	3100331	3101232	3101320	3102022	3102313	3103033	3103121	3110212
3111022	3111133	3113332	3120033	3121021	3122010	3123331	3131003	3131112	3131330
3132301	3200202	3200310	3201030	3201213	3202003	3202111	3202332	3211010	3211101
3212312	3213211	3220212	3221133	3222013	3222320	3223110	3230132	3230310	3232222
3233012	3233230	3300003	3302131	3302313	3310010	3311002	3312122	3313021	3320311
3321121	3321303	3322001	3323231	3330031	3331132	3331310	3332103	3333111	3333222
3333333									

$c_4(7, 2) \leq 63$

0000003	0000020	0011111	0012231	0022201	0100311	0101231	0102113	0110320	0121202
0122120	0123013	0132102	0133031	0212321	0221032	0313222	1001323	1003132	1010232
1011022	1011301	1013110	1020323	1030201	1031131	1032010	1100112	1101021	1102303
1103233	1110100	1110130	1110223	1111003	1113212	1121312	1122330	1133221	1200313
1201220	1203031	1212120	1212132	1221213	1223002	1230302	1231232	1233020	1233113
1302200	1310033	1313311	1320022	1321111	1322211	1323300	1331133	1332322	2031202
2033301	2130032	2213012							

$c_4(7, 3) \leq 14$

0011230	0103103	0132332	1001322	1010023	1031200	1112021	1121213	1122212	1130101
1213311	1222033	1300130	1312220						