

List of fundamental spectral types with index of the rigidity ≥ -10

Toshio Oshima (2024.2.18)

idx=0 (Pidx=1), 4 basic (fundamental) tuples

3: 111,111,111	4: 211,211,1111	6: 33,222,111111	2: 11,11,11,11
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idx=-2 (Pidx=2), 13 basic (fundamental) tuples

4: 211,1111,1111	5: 32,11111,11111	5: 221,221,11111	6: 33,2211,111111
6: 222,222,2211	8: 44,332,11111111	8: 44,2222,22211	10: 55,3331,22222
12: 66,444,2222211	3: 21,21,111,111	4: 22,22,22,211	4: 31,22,22,1111
2: 11,11,11,11,11			

idx=-4 (Pidx=3), 37 basic (fundamental) tuples

4: 1111,1111,1111	5: 221,2111,11111	5: 311,11111,11111	6: 33,21111,111111
6: 42,111111,111111	6: 222,222,21111	6: 222,2211,2211	6: 321,222,111111
7: 43,2221,111111	7: 331,331,111111	7: 331,2221,2221	8: 44,2222,221111
8: 44,3311,1111111	8: 44,22211,22211	8: 332,332,2222	9: 54,333,11111111
9: 333,333,3321	9: 441,333,22221	10: 55,442,111111111	10: 55,3322,22222
10: 55,3331,222211	12: 66,444,2222111	12: 66,3333,33321	14: 77,554,2222222
18: 99,666,3333321	3: 21,111,111,111	4: 22,22,22,1111	4: 22,22,211,211
4: 31,22,211,1111	4: 31,31,1111,1111	6: 33,33,33,321	6: 42,33,33,222
6: 51,33,33,11111	6: 51,33,222,222	3: 21,21,21,21,111	4: 31,31,22,22,22
2: 11,11,11,11,11,11			

idx=-6 (Pidx=4), 69 basic (fundamental) tuples

5: 221,11111,11111	5: 2111,2111,11111	6: 33,111111,111111	6: 222,222,111111
6: 222,2211,21111	6: 321,2211,111111	6: 411,111111,111111	6: 2211,2211,2211
6: 3111,222,111111	7: 43,22111,111111	7: 52,1111111,111111	7: 322,2221,2221
7: 331,322,111111	7: 331,2221,22111	8: 44,2222,211111	8: 44,3221,1111111
8: 44,22211,221111	8: 53,2222,111111	8: 332,332,22211	8: 332,3311,2222
8: 431,2222,2222	9: 54,22221,22221	9: 333,333,3222	9: 333,333,33111
9: 441,333,222111	9: 441,441,1111111	10: 55,433,1111111	10: 55,3322,222211
10: 55,3331,222111	10: 55,4411,1111111	10: 55,33211,22222	12: 66,444,2221111
12: 66,552,1111111	12: 66,3333,33222	12: 66,3333,33311	12: 66,4431,222222
12: 444,444,4431	12: 552,444,3333	14: 77,554,2222211	14: 77,4442,33332
15: 771,555,33333	16: 88,4444,44431	16: 88,5551,33333	18: 99,666,3333222
18: 99,666,3333311	24: cc,888,4444431	3: 111,111,111,111	4: 22,22,211,1111
4: 22,211,211,211	4: 31,22,1111,1111	4: 31,211,211,1111	5: 32,32,32,11111
5: 32,32,221,221	5: 41,32,221,1111	5: 41,41,11111,1111	5: 41,221,221,221
6: 33,33,33,222	6: 33,33,33,3111	6: 42,33,33,2211	6: 51,33,222,2211
6: 411,33,33,222	8: 44,44,44,431	8: 71,44,44,111111	3: 21,21,21,111,111
4: 31,22,22,22,22	4: 31,31,22,22,211	4: 31,31,31,22,1111	3: 21,21,21,21,21,21
2: 11,11,11,11,11,11			

idx=-8 (Pidx=5), 113 fundamental (100 basic) tuples

5: 2111,11111,11111	6: 222,2211,111111	6: 222,21111,21111	6: 321,21111,111111
6: 2211,2211,21111	6: 3111,2211,111111	7: 43,211111,1111111	7: 322,322,1111111
7: 322,2221,22111	7: 331,2221,211111	7: 331,3211,1111111	7: 331,22111,22111
7: 421,2221,1111111	7: 511,1111111,1111111	7: 3211,2221,2221	8: 44,2222,11111111
8: 44,22211,2111111	8: 44,32111,11111111	8: 44,221111,221111	8: 53,22211,11111111
8: 62,11111111,11111111	8: 332,332,221111	8: 332,3221,2222	8: 332,3311,22211
8: 422,2222,2222	8: 431,332,11111111	8: 431,2222,22211	8: 3311,3311,2222
9: 54,3321,11111111	9: 54,22221,222111	9: 333,333,32211	9: 333,3321,3321
9: 432,333,22221	9: 441,333,2211111	9: 441,3321,22221	10: 55,3322,2221111
10: 55,3331,22111111	10: 55,32221,22222	10: 55,33211,222211	10: 55,331111,22222
10: 64,22222,22222	10: 442,442,22222	10: 442,3331,3331	11: 65,443,11111111111
11: 65,3332,222221	11: 443,443,3332	11: 551,443,222221	11: 551,551,11111111111
11: 551,3332,3332	12: 66,444,2211111111	12: 66,3333,332211	12: 66,4422,222222
12: 66,4431,2222211	12: 66,5511,11111111111	12: 66,33321,33321	12: 444,444,4422
12: 5511,444,3333	14: 77,554,222221111	14: 77,662,1111111111111	14: 77,4433,33332
14: 77,4442,333311	14: 77,44411,33332	15: 87,555,2222221	15: 555,555,5541
16: 88,664,2222222	16: 88,4444,44422	16: 88,5551,333322	18: 99,666,33332211
20: aa,776,3333332	20: aa,5555,55541	20: aa,6662,44444	24: cc,888,4444422
30: ff,aaa,5555541	4: 22,22,1111,1111	4: 22,211,211,1111	4: 31,211,1111,1111
4: 211,211,211,211	5: 32,32,221,2111	5: 32,32,311,11111	5: 32,311,221,221
5: 41,32,2111,11111	5: 41,221,221,2111	5: 41,311,221,11111	6: 33,33,33,2211
6: 33,33,321,321	6: 42,33,33,21111	6: 42,33,321,222	6: 42,42,33,111111
6: 42,42,222,222	6: 51,33,222,21111	6: 51,33,321,111111	6: 51,33,2211,2211
6: 51,42,222,111111	6: 51,51,111111,111111	6: 51,321,222,222	6: 411,33,33,2211
8: 44,44,44,422	8: 53,44,44,332	8: 62,44,44,2222	8: 71,44,332,2222
10: 55,55,55,541	10: 91,55,55,111111111	3: 21,21,111,111,111	4: 22,22,22,22,22
4: 31,22,22,22,211	4: 31,31,22,22,1111	4: 31,31,22,211,211	4: 31,31,31,211,1111
6: 51,42,33,33,33	6: 51,51,33,33,222	3: 21,21,21,21,21,111	4: 31,31,31,31,22,22
2: 11,11,11,11,11,11,11			

Numbers of fundamental spectral types with a fixed index of rigidity

rigidity index	0	-2	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22
time(sec)			0.02	0.03	0.11	0.22	0.64	1.13	2.25	4.03	7.50	12.92
total number	4	13	37	69	113	198	291	415	647	883	1186	1682
3 singular points	3	9	25	46	73	127	182	249	395	521	680	963
4 singular points	1	3	9	17	29	50	76	115	172	243	345	478

This list is obtained by the command `spbasic(idx)` in the library `os_muldif.rr` of the computer algebra Risa/Asir. The time for the calculation to get the list is given under Let's Note CF-SZ5 (i7-6500U), 2016.

idx=-10 (Pidx=6), 198 basic (fundamental) tuples

5: 11111,11111,11111	6: 222,21111,111111	6: 321,111111,111111	6: 2211,2211,111111
6: 2211,21111,21111	6: 3111,21111,111111	7: 43,1111111,1111111	7: 322,2221,211111
7: 322,3211,1111111	7: 322,22111,22111	7: 331,2221,1111111	7: 331,22111,211111
7: 331,31111,1111111	7: 421,22111,1111111	7: 2221,2221,2221	7: 3211,2221,22111
7: 4111,2221,1111111	7: 31111,2221,2221	8: 44,22211,11111111	8: 44,221111,2111111
8: 44,311111,11111111	8: 53,221111,11111111	8: 332,332,2111111	8: 332,2222,2222
8: 332,3221,22211	8: 332,3311,221111	8: 332,32111,2222	8: 422,332,11111111
8: 422,2222,22211	8: 431,2222,221111	8: 431,3311,11111111	8: 431,22211,22211
8: 521,2222,11111111	8: 611,11111111,11111111	8: 3311,3221,2222	8: 3311,3311,22211
8: 4211,2222,2222	9: 54,3222,111111111	9: 54,22221,2211111	9: 54,33111,111111111
9: 54,222111,222111	9: 63,22221,111111111	9: 72,111111111,111111111	9: 333,333,22221
9: 333,333,321111	9: 333,3321,3222	9: 333,3321,33111	9: 432,333,222111
9: 441,333,21111111	9: 441,432,111111111	9: 441,3222,22221	9: 441,3321,222111
9: 441,33111,22221	9: 531,333,111111111	9: 4311,333,22221	10: 55,3322,221111111
10: 55,3331,211111111	10: 55,4321,1111111111	10: 55,22222,22222	10: 55,32221,222211
10: 55,33211,2221111	10: 55,322111,22222	10: 55,331111,222211	10: 64,3331,1111111111
10: 64,22222,222211	10: 433,3331,3331	10: 442,433,22222	10: 442,442,222211
10: 442,3331,3322	10: 442,4411,22222	10: 541,3331,22222	10: 4411,3331,3331
11: 65,3332,2222111	11: 65,33311,222221	11: 443,443,33311	11: 551,443,2222111
11: 551,3332,33311	12: 66,444,21111111111	12: 66,543,111111111111	12: 66,3333,322221
12: 66,3333,3321111	12: 66,4332,222222	12: 66,4422,2222211	12: 66,4431,22221111
12: 66,33321,33222	12: 66,33321,333111	12: 66,44211,222222	12: 75,444,111111111111
12: 75,3333,222222	12: 444,444,4332	12: 444,444,44211	12: 543,444,3333
12: 552,444,33321	12: 651,444,222222	12: 651,3333,3333	13: 76,4441,2222221
13: 76,33331,33331	13: 661,661,1111111111111	13: 661,4441,33331	14: 77,554,2222111111
14: 77,4433,333311	14: 77,4442,333221	14: 77,5531,2222222	14: 77,6611,1111111111111
14: 77,44411,333311	15: 87,555,222222111	15: 87,4443,33333	15: 771,555,333321
16: 88,655,22222222	16: 88,664,222222211	16: 88,772,111111111111111	16: 88,4444,44332
16: 88,4444,444211	16: 88,5551,3333211	18: 99,666,33322221	18: 99,666,333321111
18: 99,5553,44442	18: 99,6651,333333	18: 666,666,6651	20: aa,776,33333311
20: aa,66611,44444	21: ba,777,3333333	22: bb,7771,444442	24: cc,888,4444332
24: cc,888,44444211	24: cc,6666,66651	36: ii,ccc,6666651	4: 22,211,1111,1111
4: 31,1111,1111,1111	4: 211,211,211,1111	5: 32,32,221,11111	5: 32,32,2111,2111
5: 32,221,221,221	5: 32,311,221,2111	5: 32,311,311,11111	5: 41,32,11111,11111
5: 41,221,221,11111	5: 41,221,2111,2111	5: 41,311,2111,11111	5: 311,311,221,221
6: 33,33,33,21111	6: 33,33,321,222	6: 33,33,321,3111	6: 42,33,33,111111
6: 42,33,222,222	6: 42,33,321,2211	6: 42,33,3111,222	6: 42,42,222,2211
6: 42,411,33,111111	6: 42,411,222,222	6: 51,33,222,111111	6: 51,33,2211,21111
6: 51,33,3111,111111	6: 51,42,2211,111111	6: 51,222,222,222	6: 51,321,222,2211
6: 51,411,222,111111	6: 51,3111,222,222	6: 411,33,33,21111	6: 411,33,321,222
7: 43,43,43,2221	7: 43,43,331,331	7: 61,43,331,1111111	7: 61,43,2221,2221
7: 61,61,11111111,1111111	7: 61,331,331,2221	8: 44,44,44,332	8: 44,44,44,4211
8: 53,44,44,3311	8: 62,44,44,22211	8: 71,44,332,22211	8: 71,44,3311,2222
8: 611,44,44,2222	9: 81,441,333,333	12: 66,66,66,651	12: b1,66,66,111111111111
12: b1,66,444,3333	3: 21,111,111,111,111	4: 22,22,22,22,211	4: 31,22,22,22,1111
4: 31,22,22,211,211	4: 31,31,22,211,1111	4: 31,31,31,1111,1111	4: 31,31,211,211,211
5: 32,32,32,32,32	5: 41,32,32,32,221	5: 41,41,32,32,11111	5: 41,41,32,221,221
5: 41,41,41,221,11111	6: 51,33,33,33,33	6: 51,51,33,33,2211	6: 51,411,33,33,33
3: 21,21,21,21,111,111	4: 31,31,31,22,22,22	4: 31,31,31,31,22,211	4: 31,31,31,31,31,1111
3: 21,21,21,21,21,21,21	2: 11,11,11,11,11,11,11		