High precision study of the structure of $D = 4$ supersymmetric Yang-Mills quantum mechanics: Supplementary material

M. Campostrini
INFN, Sezione di Pisa, and
Dipartimento di Fisica "Enrico Fermi" dell'Università di Pisa,
Via Buonarroti 2, I-56127 Pisa, Italy
and
J. Wosiek
M.Smoluchowski Institute of Physics, Jagellonian University,
Reymonta 4, 30-059 Kraków, Poland

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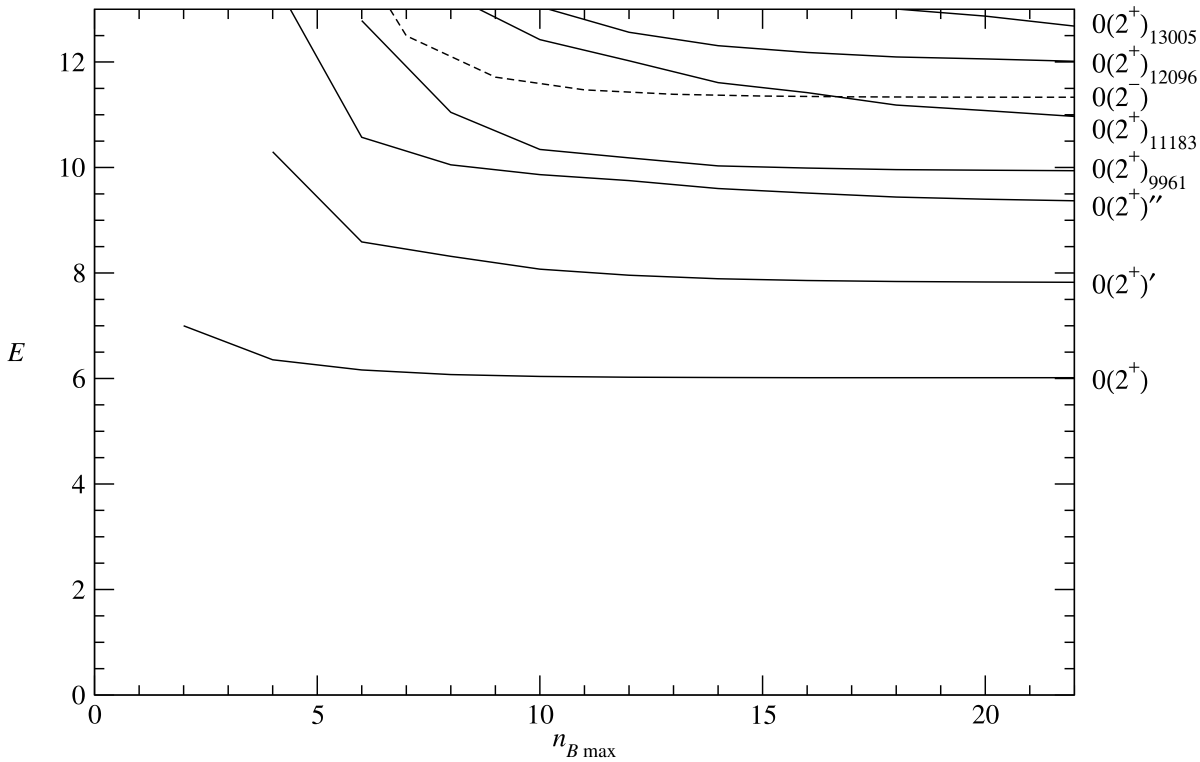

Figure 1: Energy levels vs. $n_{B\,\max}$ for the channel $(0,2)$; solid lines indicate even n_B-parity, dashed lines odd n_B-parity.

1 Introduction

The present preprint contains supplementary material to Ref. [1], used by the authors to compile the spectroscopical data of Tables 9 and 10; it was excluded from Ref. [1] in order not to clog it with details. The reader is supposed to be already familiar with the above-mentioned paper.

2 Energy plots

We report in the present Section the plots of energy levels vs. $n_{B\,\max}$ for all the channels with $j \leq 4$ which were excluded from Ref. [1].

For $n_F = 0$, the channel $j = 0$ was presented in Ref. [1]. The channel $j = 1$ is absent. The channels $j = 2$, $j = 3$ and $j = 4$ are shown in Figs. 1–3; they are qualitatively similar to $j = 0$, and do not require a separate discussion.

For $n_F = 1$, the channel $j = \frac{1}{2}$ was presented in Ref. [1]. The channels $j = \frac{3}{2}$, $j = \frac{5}{2}$ and $j = \frac{7}{2}$ are shown in Figs. 4–6; they are very similar to $j = \frac{1}{2}$.

For $n_F = 2$, the channels $j = 0$ and $j = 1$ were presented in Ref. [1]. The channels $j = 2$, $j = 3$, and $j = 4$ are shown in Figs. 7–9; they are qualitatively similar to $j = 0$ for even j and to $j = 1$ for odd j.

For $n_F = 3$, the channel $j = \frac{1}{2}$ was presented in Ref. [1]. The channels $j = \frac{3}{2}$, $j = \frac{5}{2}$ and $j = \frac{7}{2}$ are shown in Figs. 10–12; they are qualitatively similar to $j = \frac{1}{2}$.

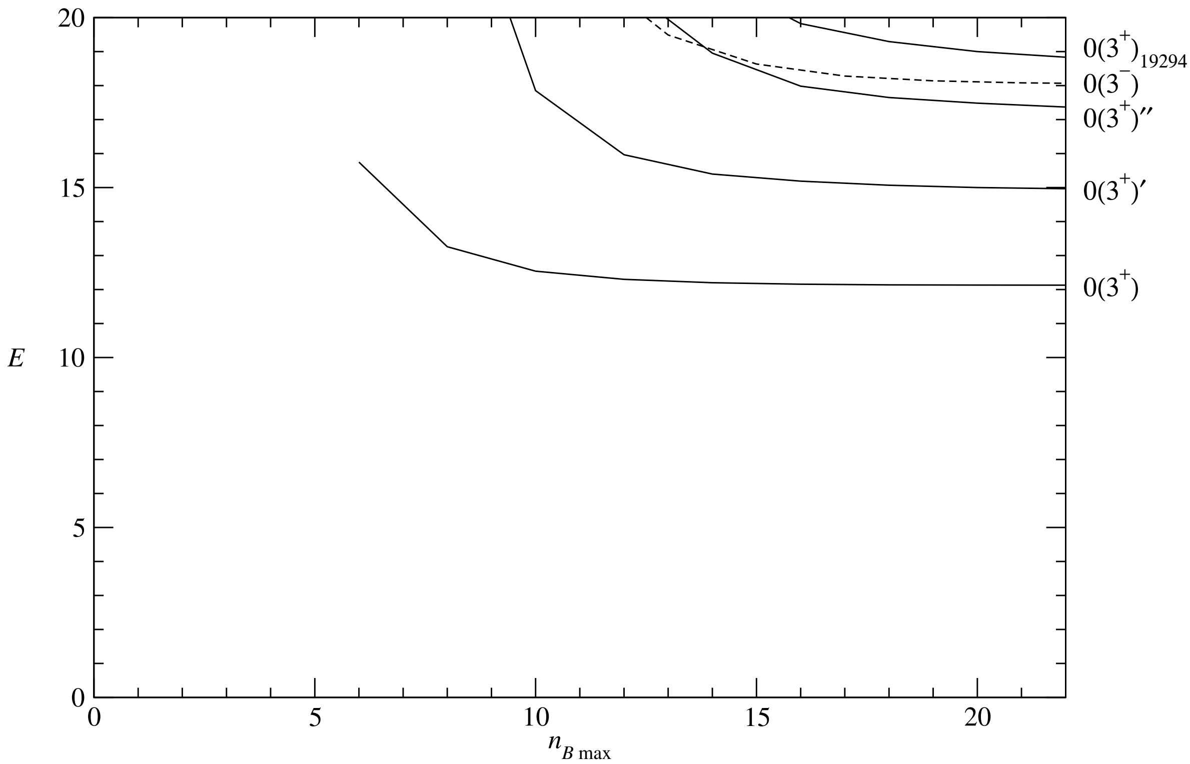

Figure 2: Energy levels vs. $n_{B\,\mathrm{max}}$ for the channel $(0, 3)$; solid lines indicate even n_B-parity, dashed lines odd n_B-parity.

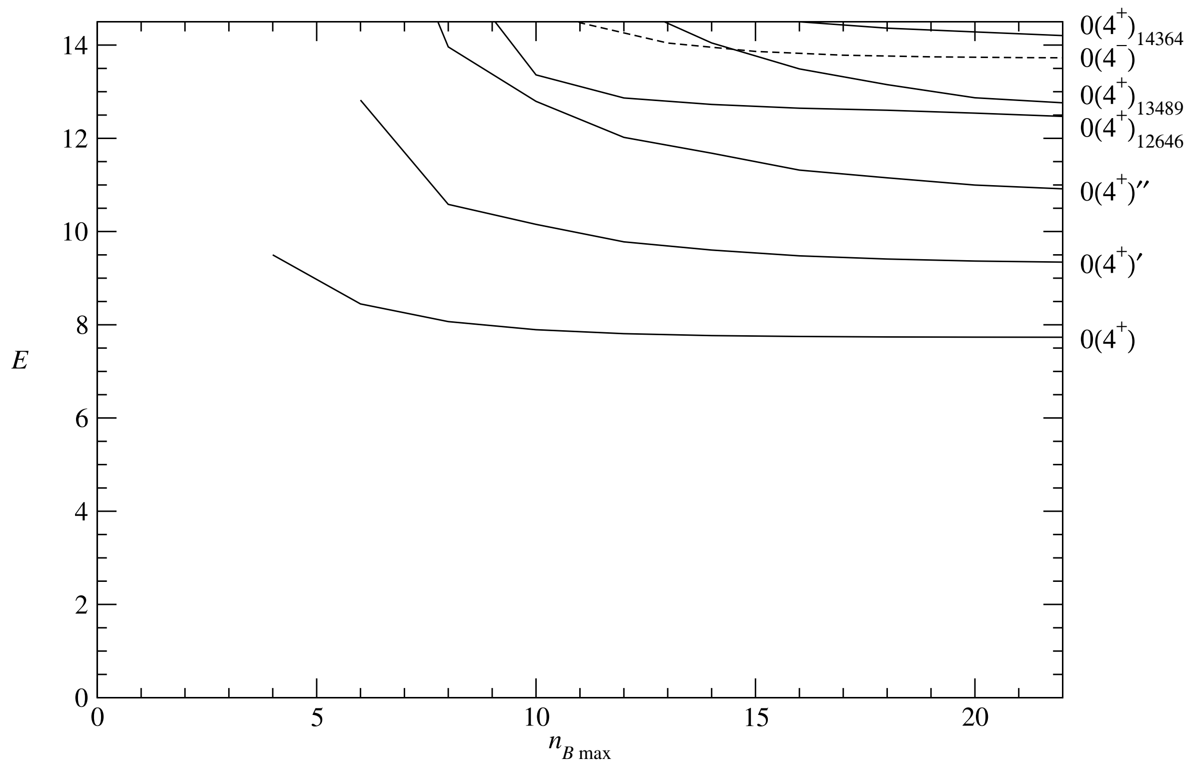

Figure 3: Energy levels vs. $n_{B\,\mathrm{max}}$ for the channel $(0, 4)$; solid lines indicate even n_B-parity, dashed lines odd n_B-parity.

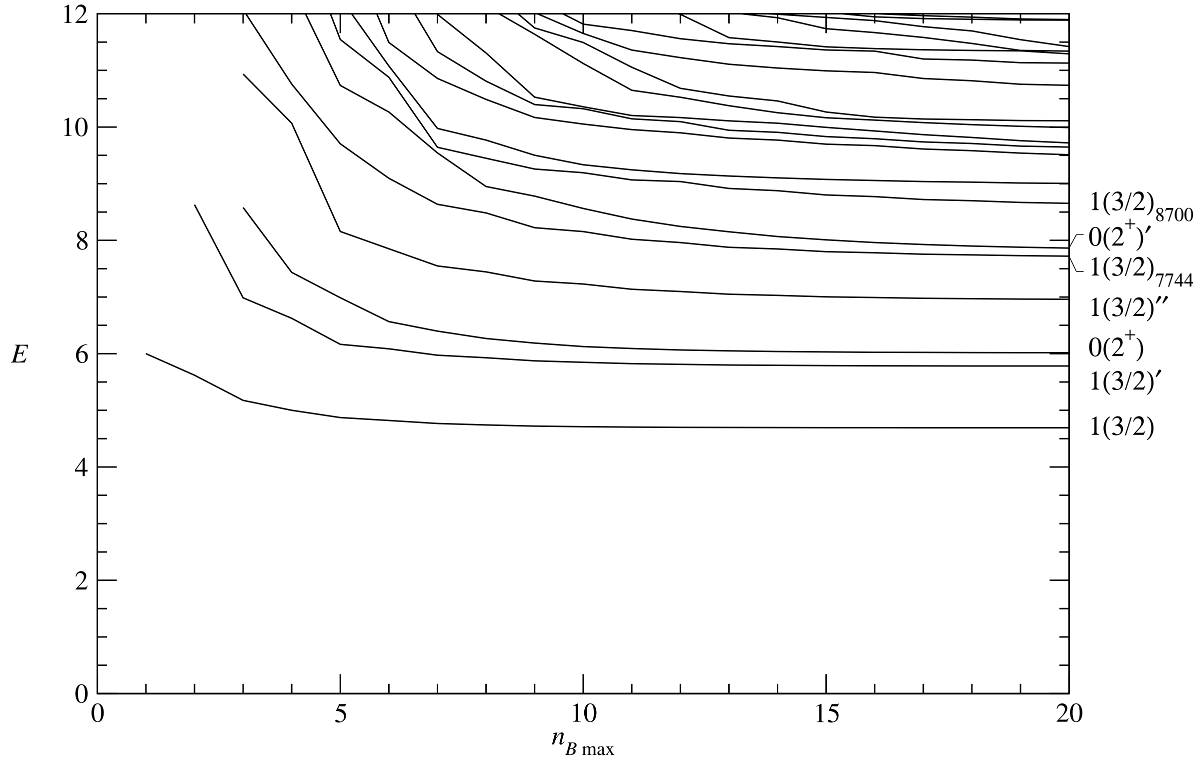

Figure 4: Energy levels vs. $n_{B\,\mathrm{max}}$ for the channel $(1, \frac{3}{2})$.

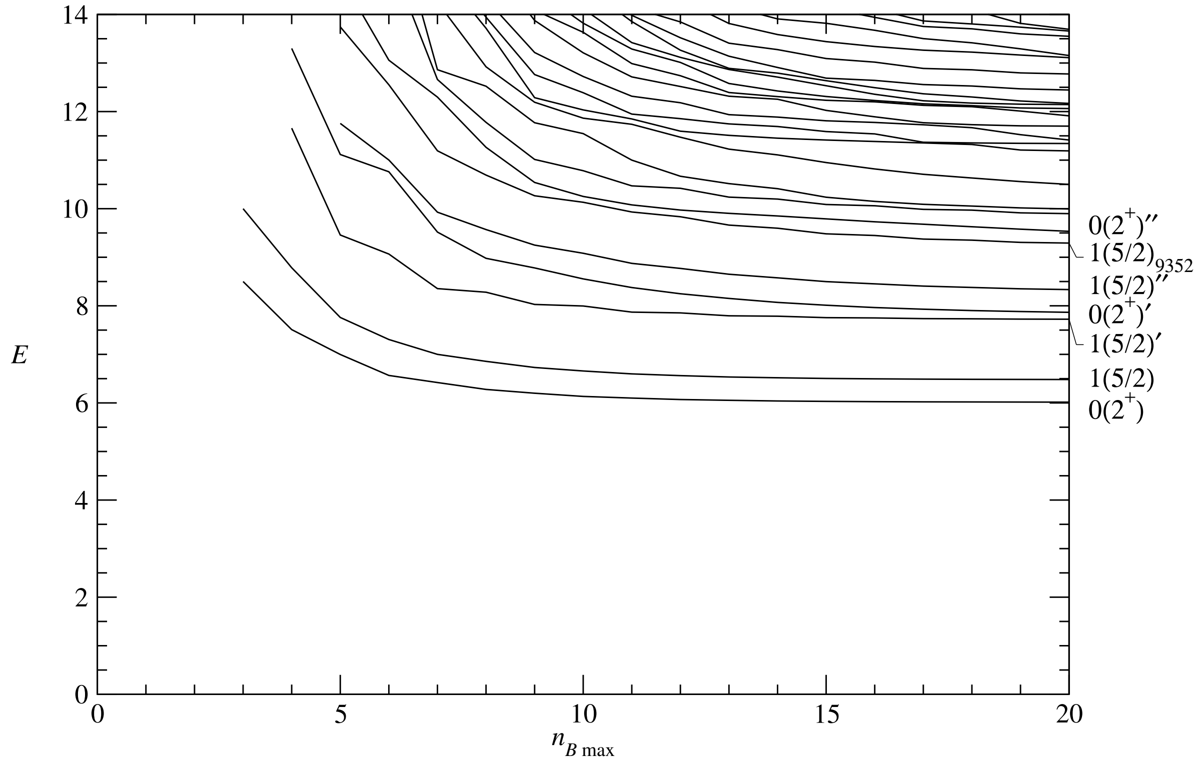

Figure 5: Energy levels vs. $n_{B\,\mathrm{max}}$ for the channel $(1, \frac{5}{2})$.

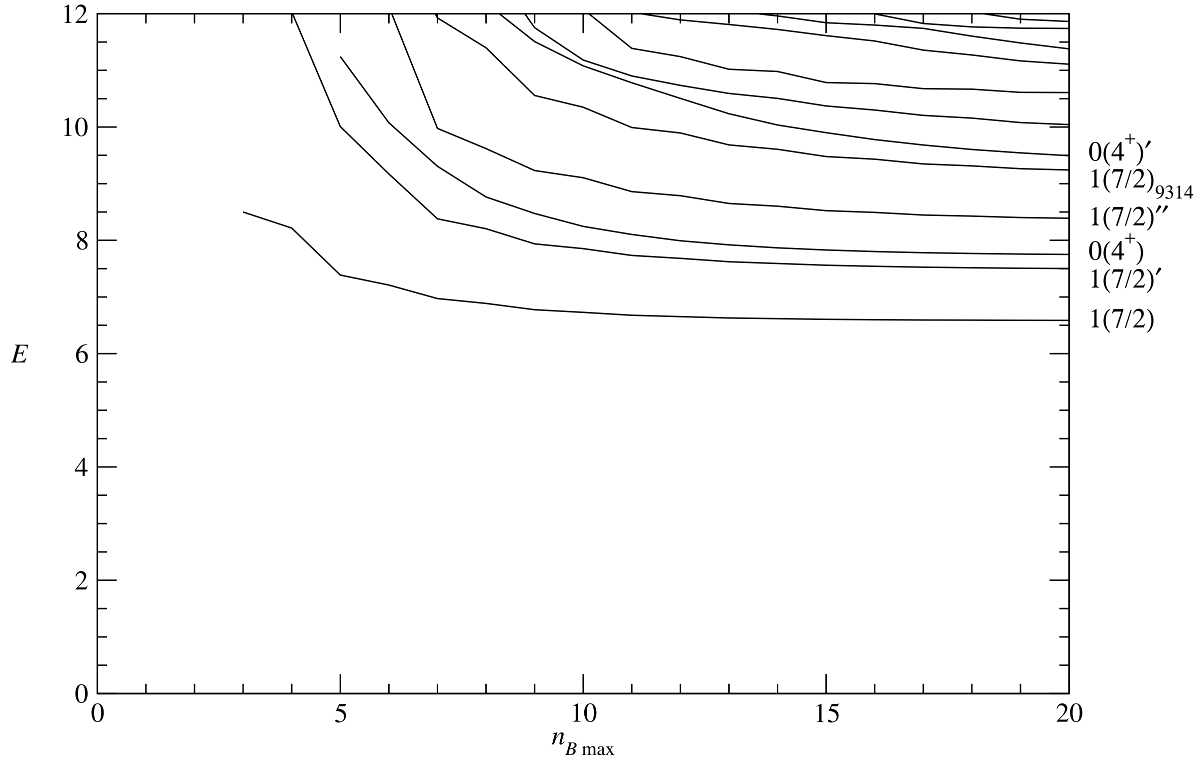

Figure 6: Energy levels vs. $n_{B\,\mathrm{max}}$ for the channel $(1, \frac{7}{2})$.

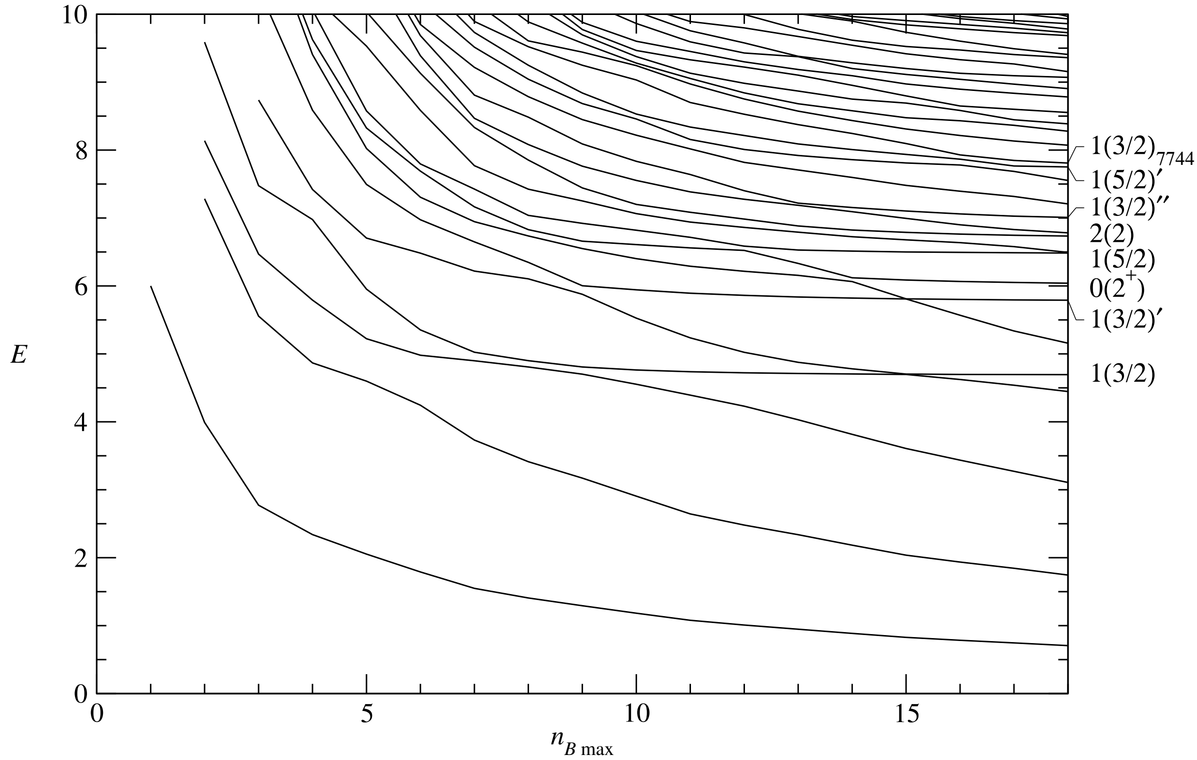

Figure 7: Energy levels vs. $n_{B\,\mathrm{max}}$ for the channel $(2, 2)$.

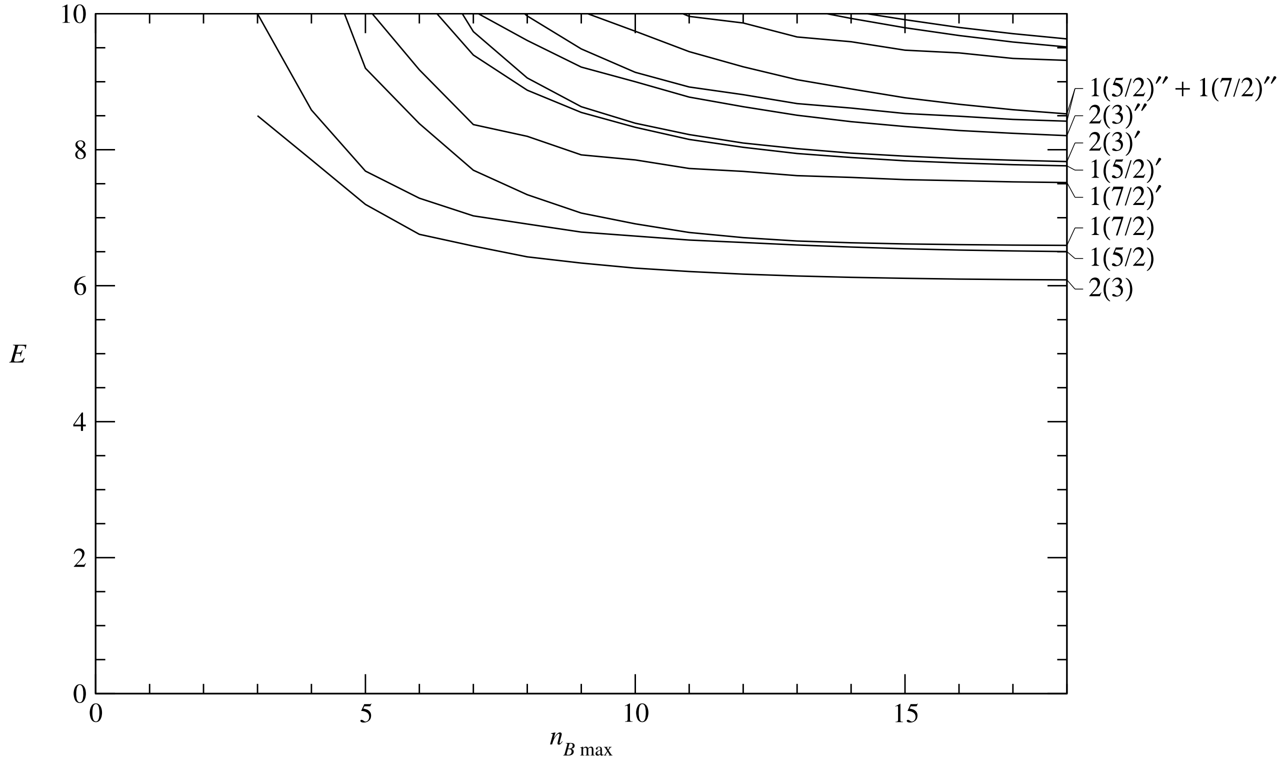

Figure 8: Energy levels vs. $n_{B\,\max}$ for the channel $(2, 3)$.

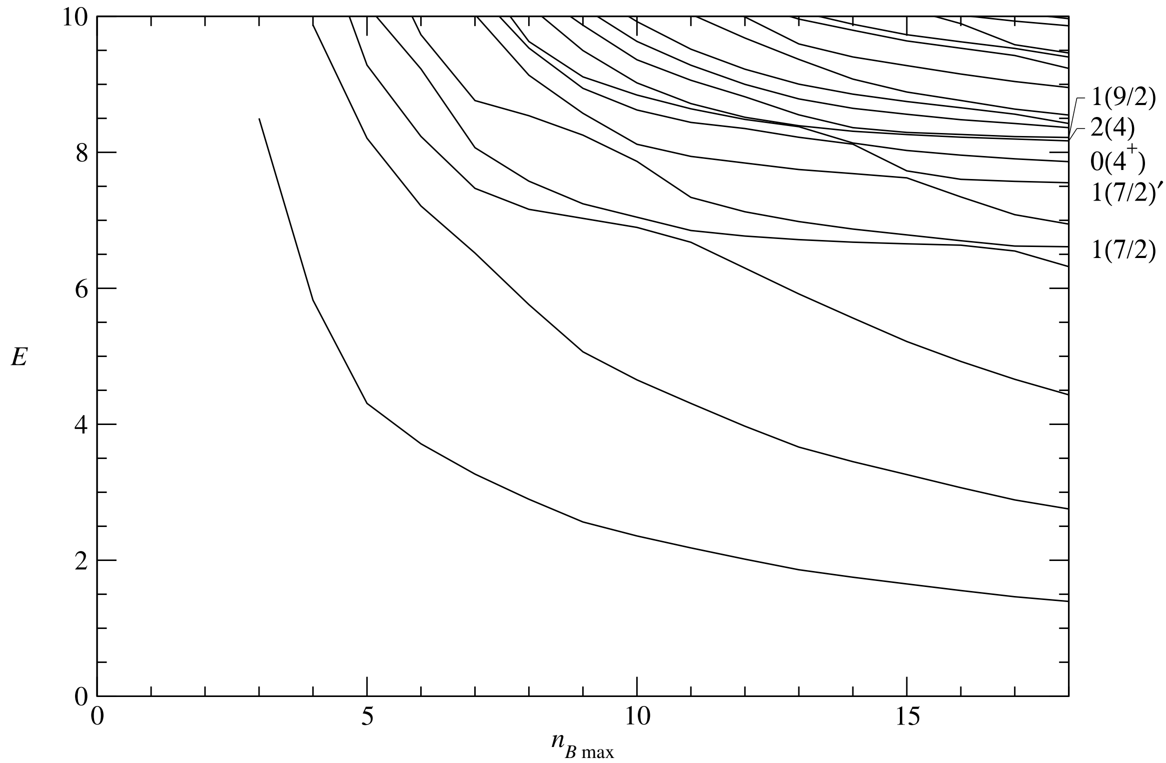

Figure 9: Energy levels vs. $n_{B\,\max}$ for the channel $(2, 4)$.

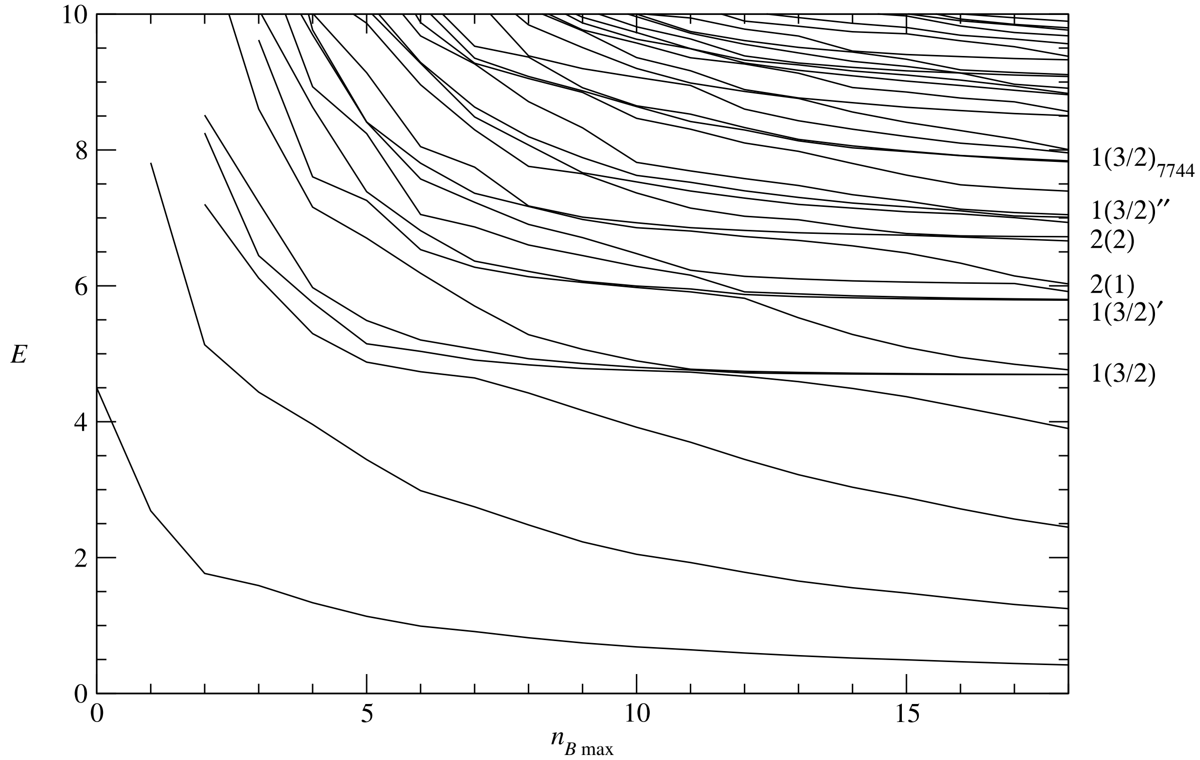

Figure 10: Energy levels vs. $n_{B\,\max}$ for the channel $(3, \frac{3}{2})$.

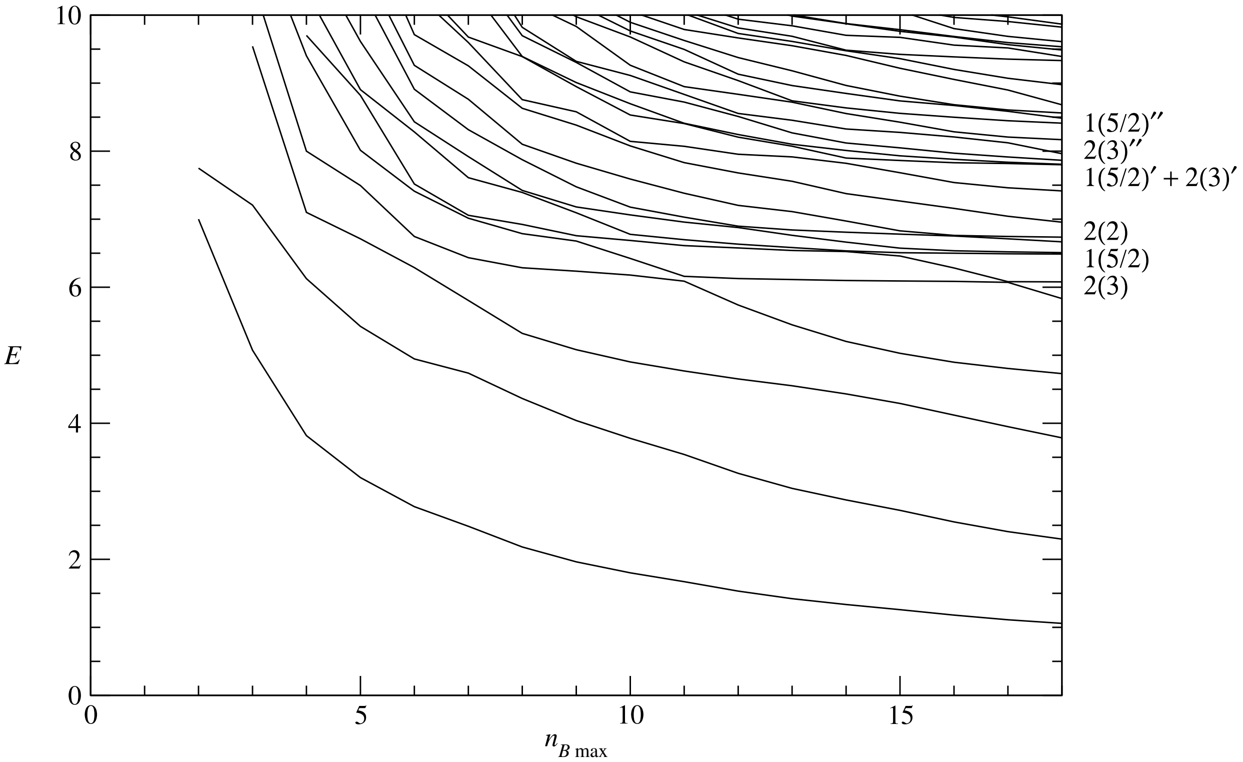

Figure 11: Energy levels vs. $n_{B\,\max}$ for the channel $(3, \frac{5}{2})$.

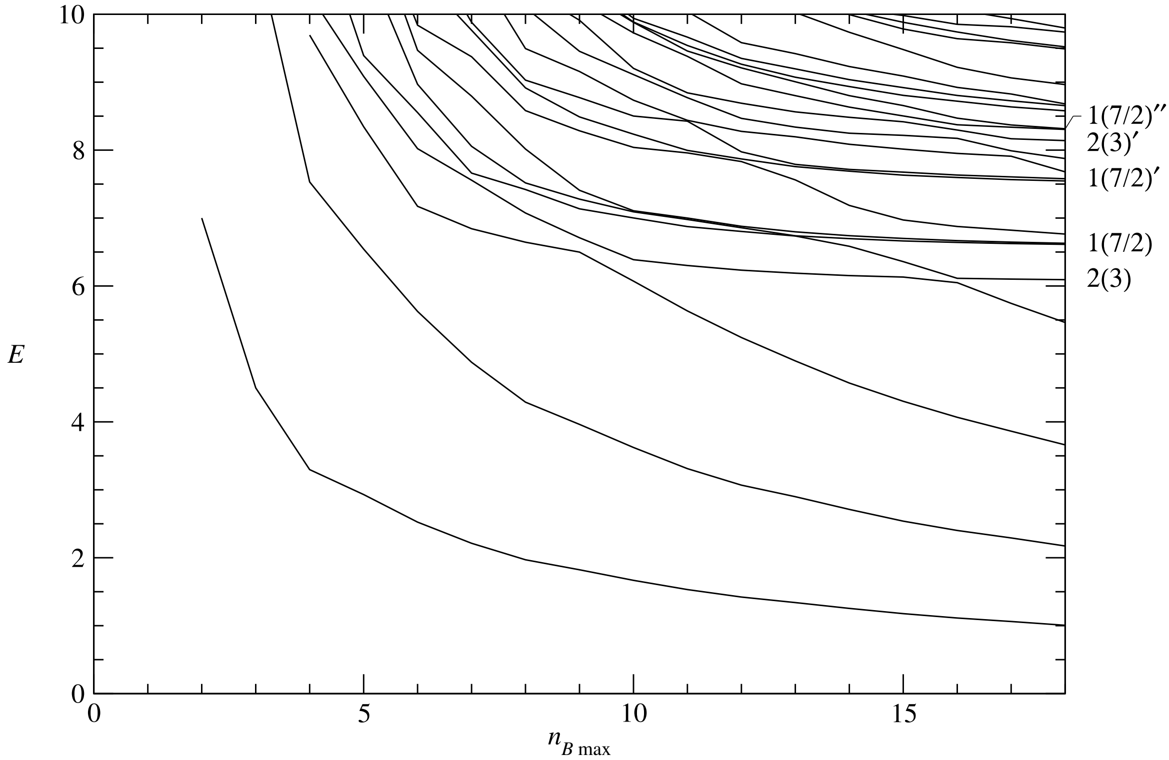

Figure 12: Energy levels vs. $n_{B\,\max}$ for the channel $(3, \frac{7}{2})$.

3 Supersymmetry fraction matrices

For $n_F = 1$ vs. $n_F = 0$, positive parity, the matrix $q(1, \frac{1}{2}|0, 0^+)$ was presented in Ref. [1]. The remaining matrices with $j \leq 4$ are presented in Tables 1–5. They are qualitatively similar to $q(1, \frac{1}{2}|0, 0^+)$.

For $n_F = 1$ vs. $n_F = 0$, negative parity, the matrix $q(1, \frac{1}{2}|0, 0^-)$ was presented in Ref. [1]. The remaining matrices with $j \leq 4$ are presented in Tables 6–10. They are qualitatively similar to $q(1, \frac{1}{2}|0, 0^-)$.

For $n_F = 2$ vs. $n_F = 1$, the matrices $q(2, 0|1, \frac{1}{2})$ and $q(2, 1|1, \frac{1}{2})$ were presented in Ref. [1]. The remaining matrices with $j \leq 4$ are presented in Tables 11–16. $q(2, j|1, j \pm \frac{1}{2})$ is qualitatively similar to $q(2, 0|1, \frac{1}{2})$ for even j and to $q(2, 1|1, \frac{1}{2})$ for odd j.

	$(0, 2^+)$								
$(1, 3/2)$	6015	7839	9441	9961	11183	12096	13005	13349	14952
4692	0	0	0	0	0	0	0	0	0
5783	0	0	0	0	0	0	0	0	0
6019	1999	0	0	0	0	0	0	0	0
6971	0	1	0	0	0	0	0	0	0
7744	0	41	0	0	0	0	0	0	0
7899	0	1943	7	1	1	0	0	0	0
8700	0	1	8	1	1	0	0	0	0
9027	0	0	5	0	0	0	0	0	0
9583	0	3	1377	47	10	1	0	0	0
9710	0	1	400	114	22	1	1	1	0
9817	0	0	20	45	4	0	0	0	0
10042	0	2	106	1708	42	2	1	0	0
10129	0	0	9	54	8	0	0	0	0
10817	0	0	0	0	40	1	1	1	0
11183	0	0	0	0	71	0	0	0	0
11352	0	0	0	0	0	1	0	0	0
11475	0	0	3	2	274	11	2	1	0
11696	0	1	20	11	1196	242	55	40	1
11902	0	0	0	0	7	0	0	1	0
11940	0	0	0	0	1	65	0	1	0
12245	0	0	4	2	63	1019	30	10	1
12355	0	0	3	1	69	560	107	59	5
12705	0	0	0	0	1	5	50	1	1
13197	0	0	1	1	13	14	1168	534	5
13283	0	0	0	0	0	1	83	112	1
13506	0	0	1	0	3	3	1	108	0

Table 1: Matrix of supersymmetry fractions $q(1, \frac{3}{2}|0, 2^+)$ at $n_{B\,\max} = 18$.

(1, 5/2)	6015	7839	9441	9961	11183	12096	13005	13349	14952
					$(0, 2^+)$				
6020	2999	0	0	0	0	0	0	0	0
6486	0	0	0	0	0	0	0	0	0
7733	0	14	0	0	0	0	0	0	0
7902	0	2962	12	2	1	0	0	0	1
8379	0	1	1	0	0	0	0	0	0
9352	0	0	38	0	1	0	0	0	0
9628	0	7	2667	205	46	3	1	1	1
9969	0	0	1	344	0	0	0	0	0
10053	0	3	172	2402	80	4	3	1	1
10631	0	0	0	0	1	0	0	0	0
11322	0	0	2	1	137	0	0	0	0
11355	0	0	0	0	0	1	0	0	0
11667	0	1	33	18	2007	327	74	53	1
11730	0	0	3	2	214	59	14	12	0
12101	0	0	0	0	9	41	2	1	0
12122	0	0	0	0	2	100	1	0	0
12174	0	0	0	0	1	23	0	0	0
12301	0	1	10	5	197	2292	179	80	8
12526	0	0	0	0	1	11	13	4	1
12861	0	0	0	0	1	0	26	0	0
13224	0	0	1	1	18	18	1884	961	9
13417	0	0	0	0	1	0	12	39	1
13705	0	0	1	0	7	4	37	28	2
13804	0	0	0	0	4	2	24	18	0
14095	0	0	6	3	79	43	385	1023	313
14187	0	0	2	1	33	10	131	462	55

Table 2: Matrix of supersymmetry fractions $q(1, \frac{5}{2}|0, 2^+)$ at $n_{B\,\max} = 18$.

	$(0,3^+)$		
$(1,5/2)$	12138	15068	17647
....	......	......	......
11667	0	0	0
11730	4	0	0
12101	71	0	0
12122	377	0	0
12174	2528	1	0
12301	6	0	0
12526	6	0	0
12861	1	0	0
....	......	......	......
14187	0	0	0
14305	0	10	0
14490	0	5	0
14703	0	98	0
14969	0	35	0
15126	0	1470	0
15278	0	190	1
15328	0	860	6
15451	0	219	6
15543	0	3	0
15569	0	0	0
....	......	......	......
16719	0	1	5
16807	0	11	83
16947	0	6	74
17118	0	0	2
17290	0	3	219
17323	0	0	0
17385	0	1	107
17520	0	0	50
17651	0	0	23
17831	0	0	22
18020	0	6	1477
18207	0	0	54
18306	0	4	429
18395	0	0	1
18557	0	0	2

Table 3: Matrix of supersymmetry fractions $q(1,\frac{5}{2}|3,0^+)$ at $n_{B\,\max}=18$. Ellipses indicates that some states were omitted.

		$(0,3^+)$	
$(1,7/2)$	12138	15068	17647
....	...	...	...
11604	0	0	0
11766	2	0	0
12030	23	0	0
12178	3960	1	0
12227	2	0	0
12658	1	0	0
....	...	...	...
14666	0	0	0
14810	0	56	0
15108	0	250	0
15266	0	2387	13
15347	0	1046	13
15524	0	30	2
15630	0	110	8
15883	0	15	7
16053	0	2	1
16367	0	1	1
....	...	...	...
17648	0	0	1
17768	0	1	46
17962	0	4	710
18075	0	2	517
18243	0	6	1169
18306	0	4	565
18434	0	0	6
18443	0	1	110
18663	0	2	149
18703	0	2	162
18817	0	2	106
18865	0	0	0
18981	0	0	6

Table 4: Matrix of supersymmetry fractions $q(1,\frac{7}{2}|3,0^+)$ at $n_{B\,\mathrm{max}}=18$.

	$(0, 4^+)$								
$(1, 7/2)$	7739	9411	11153	12603	13152	14364	15057	15517	16716
6591	0	0	0	0	0	0	0	0	0
7515	10	1	0	0	0	0	0	0	0
7768	3974	5	1	0	0	0	0	0	0
8428	4	16	2	0	0	0	0	0	0
9314	0	223	2	0	0	0	0	0	0
9603	4	3623	66	1	1	0	0	1	0
10156	0	27	43	1	2	0	0	0	0
10668	0	2	90	1	3	0	0	0	0
11271	0	1	209	0	0	0	0	0	0
11604	1	46	3134	52	137	1	1	0	0
11766	0	2	103	8	17	0	0	0	0
12030	0	1	71	25	72	0	1	2	0
12178	0	0	0	1	0	0	0	0	0
12227	0	0	3	3	7	0	0	0	0
12658	0	1	17	3032	55	0	1	0	0
12693	0	0	1	76	35	1	0	0	0
12762	0	0	3	641	220	2	8	1	0
13421	0	1	11	7	207	2	0	1	0
13521	0	0	3	3	64	6	0	0	0
13824	0	0	2	5	54	66	11	1	0
13952	0	4	99	86	2413	205	230	202	0
14002	0	0	4	1	102	4	2	19	0
14232	0	0	2	4	40	280	41	8	0
14453	0	0	1	0	8	250	21	2	1
14531	0	0	2	2	3	1180	13	23	0
14666	0	0	1	1	46	1754	226	122	0

Table 5: Matrix of supersymmetry fractions $q(1, \frac{7}{2}|4, 0^+)$ at $n_{B\,\max} = 18$.

	$(0,2^-)$		
$(1,3/2)$	11334	14045	15433
....	.....	.....	.....
10042	0	0	0
10129	0	0	0
10817	0	0	0
11183	4	0	0
11352	1992	0	0
11475	0	0	0
11696	1	0	0
11902	0	0	0
....	.....	.....	.....
13506	0	4	0
13842	0	29	0
13969	0	0	0
14131	0	1047	1
14198	0	864	1
14430	0	4	0
14637	0	1	1
14714	0	0	0
15009	0	10	28
15109	0	0	1
15234	0	2	5
15346	0	1	5
15503	0	0	1426
15560	0	5	498
15681	0	0	0
15928	0	0	3

Table 6: Matrix of supersymmetry fractions $q(1,\frac{3}{2}|0,2^-)$ at $n_{B\,\max} = 18|19$.

	$(0,2^-)$		
$(1,5/2)$	11334	14045	15433
....	......	......	......
10053	0	0	0
10631	0	0	0
11322	29	0	0
11355	2963	1	0
11667	2	0	0
11730	0	0	0
12101	0	0	0
....	......	......	......
13224	0	2	0
13417	0	1	0
13705	0	3	0
13804	0	13	0
14095	0	703	0
14187	0	2044	2
14305	0	158	1
14490	0	0	0
14703	0	12	2
14969	0	6	0
15126	0	3	13
15278	0	0	50
15328	0	2	48
15451	0	0	228
15543	0	0	1460
15569	0	7	1133
15739	0	0	10
16061	0	0	4

Table 7: Matrix of supersymmetry fractions $q(1,\frac{5}{2}|0,2^-)$ at $n_{B\,\max}=18|19$.

	$(0,3^-)$		
$(1,5/2)$	18140	22256	26443
....	......	......	......
17385	0	0	0
17520	32	0	0
17651	83	0	2
17831	3	0	0
18020	172	0	4
18207	2	0	0
18306	545	0	2
18395	1985	1	13
18557	3	0	0

Table 8: Matrix of supersymmetry fractions $q(1,\frac{5}{2}|0,3^-)$ at $n_{B\,\max} = 18|19$.

	$(0,3^-)$		
$(1,7/2)$	18140	22256	26443
....	......	......	......
17135	0	0	0
17261	1	0	0
17575	2	0	0
17648	27	0	1
17768	19	0	0
17962	30	0	1
18075	159	0	1
18243	8	0	0
18306	0	0	1
18434	1599	1	12
18443	1716	1	12
18663	0	0	0
18703	15	0	2
18817	24	0	1
18865	2	0	0
18981	11	0	0
19188	228	0	10
19378	7	0	1
19422	1	0	0

Table 9: Matrix of supersymmetry fractions $q(1,\frac{7}{2}|0,3^-)$ at $n_{B\,\max} = 18|19$.

	$(0, 4^-)$		
$(1, 7/2)$	13747	16356	18577
....	......	......	......
12658	1	0	0
12693	4	0	0
12762	0	0	0
13421	0	0	0
13521	41	0	0
13824	3713	4	0
13952	119	1	0
14002	22	1	0
14232	41	3	0
14453	12	2	0
14531	3	0	0
14666	3	1	0

Table 10: Matrix of supersymmetry fractions $q(1, \frac{7}{2}|0, 4^-)$ at $n_{B\,\max} = 18|19$.

	$(1, 3/2)$											
$(2, 1)$	4692	5783	6019	6971	7744	7899	8700	9027	9583	9710	9817	10042
4692	1500	0	0	0	0	0	0	0	0	0	0	0
5783	0	1499	0	0	0	0	0	0	0	0	0	0
6019	0	0	0	0	0	0	0	0	0	0	0	0
6395	0	0	0	0	0	0	0	0	0	0	0	0
6971	0	0	0	1492	1	0	0	0	0	0	0	0
7744	0	0	0	1	1421	30	4	0	1	0	0	0
7899	0	0	0	0	30	1	1	0	0	0	0	0
8275	0	0	0	0	0	0	0	0	0	0	0	0
8700	0	0	0	0	5	1	1409	35	8	0	9	0
9027	0	0	0	0	0	0	37	1434	10	3	1	0
9400	0	0	0	0	0	0	0	0	0	0	0	0
9583	0	0	0	0	1	0	8	11	5	73	290	0
9710	0	0	0	0	0	0	0	3	74	443	538	0
9817	0	0	0	0	0	0	10	1	297	544	485	46
10042	0	0	0	0	0	0	0	0	0	0	47	4
10129	0	0	0	0	0	0	1	0	7	7	2	44
10526	0	0	0	0	0	0	0	0	0	0	0	0

Table 11: Matrix of supersymmetry fractions $q(2, 1|1, \frac{3}{2})$ at $n_{B\,\max} = 18$.

					$(1,3/2)$				
$(2,2)$	4692	5783	6019	6971	7744	7899	8700	9027	9583
706	0	0	0	0	0	0	0	0	0
1744	0	0	0	0	0	0	0	0	1
3108	0	0	0	0	0	0	0	0	0
4446	0	0	0	0	0	0	0	0	0
4694	2500	0	0	0	0	0	0	0	0
5157	0	0	0	0	0	0	0	0	0
5791	0	2495	2	0	0	0	0	0	0
6041	0	2	1994	0	0	2	0	0	0
6484	0	0	0	1	0	0	0	0	0
6493	0	0	0	0	0	0	0	0	0
6734	0	0	0	3	0	0	0	0	0
6782	0	0	0	13	2	0	0	0	0
7008	0	0	0	2461	0	2	3	0	0
7207	0	0	0	3	0	0	0	0	0
7553	0	0	0	2	30	1	1	0	0
7751	0	0	0	0	77	18	1	0	0
7809	0	0	0	1	2328	2	0	4	1
8071	0	0	1	2	12	1912	4	0	19
8276	0	0	0	0	2	5	11	0	0
8386	0	0	0	0	10	8	13	7	1
8553	0	0	0	0	0	4	21	0	1
8782	0	0	0	1	0	2	1773	4	0
8904	0	0	0	1	1	0	576	109	4
9070	0	0	0	0	2	0	6	2181	0
9154	0	0	0	0	1	0	3	139	6
9359	0	0	0	0	0	0	0	0	2

Table 12: Matrix of supersymmetry fractions $q(2,2|1,\frac{3}{2})$ at $n_{B\,\max}=18$.

					$(1,5/2)$				
$(2,2)$	6020	6486	7733	7902	8379	9352	9628	9969	10053
706	0	0	0	0	0	0	1	0	0
1744	0	0	0	0	0	0	1	0	0
3108	0	0	0	0	0	0	0	0	0
4446	0	0	0	0	0	0	0	0	0
4694	0	0	0	0	0	0	0	0	0
5157	0	0	0	0	0	0	0	0	0
5791	4	0	0	0	0	0	0	0	0
6041	2989	0	0	2	0	0	0	0	0
6484	0	1832	0	0	0	0	0	0	0
6493	0	661	0	0	0	0	0	0	0
6734	0	0	0	1	0	0	0	0	0
6782	0	1	0	0	0	0	0	0	0
7008	1	1	1	8	1	0	1	0	0
7207	0	0	2	0	0	0	0	0	0
7553	0	0	3	4	2	0	0	0	0
7751	0	0	2405	12	5	0	0	1	0
7809	0	0	76	109	10	1	1	0	0
8071	2	0	0	2758	12	2	33	1	10
8276	0	0	0	5	334	0	0	1	0
8386	0	0	4	6	2045	7	3	0	1
8553	0	0	1	5	4	6	3	1	2
8782	0	0	0	11	10	1	21	3	5
8904	0	0	0	0	11	23	5	1	1
9070	0	0	0	1	12	56	7	1	1
9154	0	0	0	0	1	122	0	1	0
9359	0	0	0	0	3	68	2	13	5

Table 13: Matrix of supersymmetry fractions $q(2,2|1,\frac{5}{2})$ at $n_{B\,\max}=18$.

	$(1,5/2)$										
$(2,3)$	6020	6486	7733	7902	8379	9352	9628	9969	10053	10631	11322
6085	0	3	0	0	0	0	0	0	0	0	0
6501	0	3479	0	0	1	0	0	0	0	0	0
6593	0	9	0	0	0	0	0	0	0	0	0
7518	0	0	7	0	4	0	0	0	0	0	0
7763	0	0	3451	16	0	4	0	1	0	0	0
7826	0	0	3	0	0	0	0	0	0	0	0
8208	0	0	6	0	260	7	0	1	0	2	0
8420	0	0	0	0	1159	0	0	1	0	0	0
8527	0	1	2	1	1983	13	1	11	1	10	0
9314	0	0	0	0	15	530	8	29	1	10	0
9512	0	0	3	0	9	2738	32	15	0	25	18
9630	0	0	0	0	0	0	0	0	0	0	0
10095	0	0	1	0	1	65	9	2167	269	6	57
10123	0	0	0	0	0	1	0	25	3	0	0
10216	0	0	0	0	8	4	5	697	83	404	1
10512	0	0	0	0	0	0	0	2	0	364	1
10748	0	0	0	0	0	0	0	4	0	557	0
10874	0	0	0	0	4	6	1	32	3	1509	7
11271	0	0	0	0	5	4	1	32	3	385	218
11381	0	0	0	0	0	0	0	0	0	1	1
11596	0	0	0	0	0	11	0	6	0	21	2131
11663	0	0	0	0	0	1	0	0	0	5	85
11760	0	0	0	0	0	0	0	2	0	1	46
11811	0	0	0	0	0	4	0	2	0	8	305
12030	0	0	0	0	0	0	0	0	0	0	8
12118	0	0	0	0	0	0	0	0	0	0	1

Table 14: Matrix of supersymmetry fractions $q(2,3|1,\frac{5}{2})$ at $n_{B\,\max}=18$.

	$(1,7/2)$										
$(2,3)$	6591	7515	7768	8428	9314	9603	10156	10668	11271	11604	11766
6085	0	0	0	0	0	0	0	0	0	0	0
6501	9	1	0	0	0	0	0	0	0	0	0
6593	3485	0	0	0	0	0	0	0	0	0	0
7518	0	3449	8	1	0	0	0	0	0	0	0
7763	0	6	0	1	0	0	0	0	0	0	0
7826	0	13	0	4	1	0	0	0	0	0	0
8208	0	1	0	10	2	0	0	0	0	0	0
8420	0	5	2	2184	39	1	0	1	3	0	0
8527	0	1	2	1212	2	7	9	1	0	1	0
9314	0	0	1	21	2406	163	59	9	0	3	0
9512	0	1	0	0	476	25	5	3	7	0	0
9630	0	1	0	2	205	9	19	1	6	0	0
10095	0	0	0	0	16	0	259	6	12	0	0
10123	0	0	0	0	43	4	1408	35	48	1	1
10216	0	0	0	0	6	7	1218	43	10	3	0
10512	0	0	0	0	2	1	46	4	3	1	0
10748	0	0	0	0	25	0	14	2164	454	3	6
10874	0	0	0	5	1	11	242	962	74	82	1
11271	0	0	0	1	0	2	38	82	1683	185	0
11381	0	0	0	0	0	0	0	0	3	0	2
11596	0	0	0	0	0	0	0	1	46	5	2
11663	0	0	0	0	4	0	7	2	386	52	261
11760	0	0	0	0	0	0	2	1	5	56	2014
11811	0	0	0	0	1	0	0	2	45	11	903
12030	0	0	0	0	3	0	3	1	155	0	74
12118	0	0	0	0	1	0	1	9	91	13	32

Table 15: Matrix of supersymmetry fractions $q(2,3|1,\frac{7}{2})$ at $n_{B\,\max}=18$.

	(1, 7/2)									
$(2,4)$	6591	7515	7768	8428	9314	9603	10156	10668	11271	11604
1394	0	0	0	0	0	2	0	0	0	3
2754	0	0	0	0	0	2	0	0	0	6
4433	0	0	0	0	0	0	0	0	0	3
6319	0	0	0	0	0	0	0	0	0	0
6611	4486	0	3	2	0	1	0	0	0	0
6944	1	5	0	1	1	0	0	0	0	0
7553	0	4423	23	0	4	1	0	0	0	0
7863	2	26	3906	13	0	27	0	0	0	1
8169	0	4	3	40	2	1	2	0	0	0
8218	0	9	3	55	8	2	1	0	1	0
8363	0	3	3	31	9	7	0	0	0	1
8424	0	0	2	201	3	0	0	0	0	0
8548	1	0	6	4049	0	13	23	4	0	1
8953	0	0	1	2	9	1	0	0	0	0
9234	0	0	0	5	295	2	9	0	3	0
9401	0	0	0	2	178	3	6	1	0	1
9462	0	2	0	0	3575	2	2	18	19	0
9862	0	0	2	4	101	396	296	2	36	6
9966	1	0	11	9	12	1970	121	2	17	60
10050	0	3	5	1	105	1215	278	3	15	88
10220	0	0	1	0	11	92	241	42	12	30
10396	0	0	0	13	16	1	2876	229	57	0
10509	0	0	1	2	3	14	190	27	23	1
10831	0	0	0	6	8	1	186	3703	92	9
10941	0	0	0	0	0	6	12	187	4	23
11169	0	0	0	1	0	3	47	87	654	1

Table 16: Matrix of supersymmetry fractions $q(2,4|1,\frac{7}{2})$ at $n_{B\,\max}=18$.

						(2,1)						
(3,3/2)	4692	5783	6019	6395	6971	7744	7899	8275	8700	9027	9400	9583
420	0	0	0	0	0	0	0	0	0	0	0	0
1248	0	0	0	0	0	0	0	0	0	0	0	0
2447	0	0	0	0	0	0	0	0	0	0	0	0
3899	0	0	0	0	0	0	0	0	0	0	0	0
4694	750	0	0	0	0	0	0	0	0	0	0	0
4696	750	0	0	0	0	0	0	0	0	0	0	0
4765	0	0	0	0	0	0	0	0	0	0	0	0
5790	0	749	0	0	0	0	0	0	0	0	0	0
5799	0	747	3	0	0	0	0	0	0	0	0	0
5916	0	2	1	0	0	0	0	0	0	0	0	0
6028	0	1	1993	0	0	0	0	0	0	0	0	0
6661	0	0	0	0	4	0	0	0	0	0	0	0
6722	0	0	0	0	2	0	0	0	0	0	0	0
6933	0	0	0	0	0	0	0	0	0	0	0	0
7010	0	0	0	0	743	1	0	0	1	0	0	0
7047	0	0	0	0	739	2	5	0	3	0	0	0
7394	0	0	0	0	0	3	3	0	0	0	0	0
7826	0	0	0	0	1	723	14	0	1	2	0	1
7839	0	0	0	0	1	628	408	0	2	2	0	0
7957	0	0	0	0	0	82	56	0	1	2	0	0
8006	0	0	0	0	0	44	1451	0	0	1	0	5
8505	0	0	0	0	0	1	0	0	13	2	0	0
8566	0	0	0	0	0	2	6	0	36	3	0	1
8813	0	0	0	0	0	0	8	0	39	1	0	15
8831	0	0	0	0	1	1	1	0	699	12	0	6
8908	0	0	0	0	2	0	3	0	614	30	0	4

Table 17: Matrix of supersymmetry fractions $q(3, \frac{3}{2}|2, 1)$ at $n_{B\,\max} = 18$.

For $n_F = 3$ vs. $n_F = 2$, the matrices $q(3, \frac{1}{2}, i'|2, 0, i)$ and $q(3, \frac{1}{2}, i'|2, 1, i)$ were presented in Ref. [1]. The remaining matrices with $j \leq 4$ are presented in Tables 18–22.

References

[1] M. Campostrini and J. Wosiek, e-print hep-th/0407021.

	(2, 2)											
$(3, 3/2)$	706	1744	3108	4446	4694	5157	5791	6041	6484	6493	6734	6782
420	906	32	3	0	0	0	0	0	0	0	0	0
1248	686	826	37	3	0	2	0	0	0	0	0	0
2447	79	716	796	29	0	16	0	0	1	1	0	1
3899	12	61	697	725	0	169	0	0	4	11	0	5
4694	0	0	0	0	1249	0	0	0	0	0	0	0
4696	0	0	0	0	1249	0	0	0	0	0	0	0
4765	2	9	57	931	0	848	0	0	5	14	0	5
5790	0	0	0	0	0	0	1245	2	0	0	0	0
5799	0	0	0	0	0	2	1240	2	0	1	0	0
5916	2	7	39	111	0	637	2	0	165	450	9	107
6028	0	0	0	0	0	0	2	0	0	1	0	0
6661	0	0	2	5	0	19	0	0	204	622	32	969
6722	0	0	0	0	0	0	0	0	1	1	1903	79
6933	0	1	3	7	0	28	0	0	86	181	36	671
7010	0	0	0	0	0	0	0	0	0	0	1	9
7047	0	0	0	0	0	0	0	0	0	3	1	0
7394	0	0	1	3	0	9	0	0	8	22	0	33
7826	0	0	0	0	0	0	0	0	0	0	0	1
7839	0	0	0	0	0	1	0	0	2	4	1	2
7957	1	1	3	5	0	15	0	0	10	37	4	28
8006	0	0	0	1	0	2	0	0	2	5	1	5
8505	1	1	0	0	0	0	0	0	0	0	0	1
8566	0	0	1	3	0	9	0	0	5	11	0	14
8813	1	1	1	1	0	3	0	0	2	5	1	1
8831	0	0	0	0	0	0	0	0	0	0	0	0
8908	0	0	0	0	0	0	0	0	0	0	0	0

Table 18: Matrix of supersymmetry fractions $q(3, \frac{3}{2}|2, 2)$ at $n_{B\,\max} = 18$.

	(2, 2)											
$(3, 5/2)$	706	1744	3108	4446	4694	5157	5791	6041	6484	6493	6734	6782
1058	2323	514	28	2	0	1	0	0	0	0	0	0
2297	171	1808	694	28	0	15	0	0	0	1	0	1
3785	28	125	1549	722	0	196	0	0	5	12	0	5
4729	3	15	93	1730	0	980	0	0	7	17	0	7
5832	3	14	75	207	0	1299	0	0	193	470	10	124
6079	0	0	0	0	0	0	0	0	0	0	0	0
6488	0	0	0	0	0	0	0	0	917	329	1	0
6508	0	0	0	0	0	1	0	0	1007	238	0	6
6667	0	1	4	9	0	32	0	0	290	1223	35	1154
6736	0	0	0	0	0	0	0	0	0	3	2850	122
6956	0	1	6	12	0	38	0	0	101	287	69	1323
7415	0	0	2	5	0	16	0	0	17	35	0	67
7800	0	0	0	0	0	1	0	0	1	4	0	2
7808	0	0	0	0	0	0	0	0	0	0	2	0
7866	0	0	0	0	0	0	0	0	0	0	0	0
7963	1	2	6	11	0	32	0	0	24	56	7	39
8168	0	0	0	0	0	0	0	0	0	0	0	0
8411	0	0	0	0	0	0	0	0	0	0	1	0
8485	0	0	2	3	0	7	0	0	4	6	0	9
8561	2	1	0	0	0	0	0	0	0	0	0	1
8682	0	0	2	4	0	12	0	0	6	25	0	13
8977	1	1	0	0	0	0	0	0	1	1	1	1
9331	1	1	0	0	0	0	0	0	0	0	0	0
9391	1	0	1	2	0	6	0	0	3	6	0	7
9487	1	0	0	0	0	1	0	0	0	0	0	1
9535	0	0	0	0	0	0	0	0	0	0	0	0

Table 19: Matrix of supersymmetry fractions $q(3, \frac{5}{2}|2, 2)$ at $n_{B\,\max} = 18$.

						$(2,3)$						
$(3,5/2)$	6085	6501	6593	7518	7763	7826	8208	8420	8527	9314	9512	9630
1058	0	0	0	0	0	0	0	0	0	0	1	0
2297	0	0	0	0	0	0	0	0	0	0	1	0
3785	0	0	0	0	0	0	0	0	0	0	0	0
4729	0	0	0	0	0	0	0	0	0	0	0	0
5832	0	1	0	0	0	0	0	0	0	0	0	0
6079	2991	1	0	0	0	0	0	0	0	0	0	0
6488	2	1735	5	0	0	0	0	0	0	0	0	0
6508	0	1722	5	0	0	1	0	0	0	0	0	0
6667	0	10	0	0	1	0	0	0	0	0	0	0
6736	0	1	0	0	2	0	0	0	0	0	0	0
6956	0	3	0	0	1	2	1	0	0	0	0	0
7415	0	0	0	0	30	3	2	0	0	0	1	0
7800	0	0	0	14	79	2696	1	0	7	1	0	2
7808	0	0	0	4	1701	1	1	3	14	1	0	0
7866	0	0	0	1	1591	154	15	4	8	2	5	0
7963	0	1	0	0	0	90	63	11	19	1	0	1
8168	0	0	0	1	1	1	2712	12	87	2	0	0
8411	0	0	0	2	7	0	120	510	851	3	13	0
8485	0	0	0	1	18	2	20	465	790	1	25	2
8561	0	0	0	0	14	0	16	62	95	1	30	0
8682	0	0	0	0	2	9	0	120	200	0	2	33
8977	0	0	0	0	2	2	22	1	1	3	54	19
9331	0	0	0	0	0	0	0	0	0	14	73	0
9391	0	0	0	0	0	1	0	4	5	1	187	383
9487	0	0	0	1	0	2	0	0	15	282	107	1709
9535	0	0	0	0	1	0	1	3	30	270	1173	0

Table 20: Matrix of supersymmetry fractions $q(3,\frac{5}{2}|2,3)$ at $n_{B\,\max}=18$.

	(2, 3)											
$(3, 7/2)$	6085	6501	6593	7518	7763	7826	8208	8420	8527	9314	9512	9630
1006	0	0	0	0	0	0	0	0	0	0	0	0
2172	0	0	0	0	0	0	0	0	0	1	0	0
3662	0	0	0	0	0	0	0	0	0	0	0	0
5463	0	0	0	0	0	0	0	0	0	0	0	0
6093	3985	3	0	0	0	0	0	0	0	0	0	0
6613	0	5	1740	1	0	0	0	1	0	0	0	0
6628	0	5	1738	1	0	1	0	2	1	0	0	0
6765	0	0	0	1	0	0	1	0	0	0	0	0
7546	0	0	1	1723	3	6	0	0	6	2	0	0
7578	0	0	1	1712	4	101	0	1	5	3	0	4
7681	0	0	0	0	0	17	4	0	1	0	0	0
7876	0	0	0	19	2	3795	4	0	0	0	0	6
8140	0	0	0	2	0	6	241	26	3	1	0	1
8304	0	1	0	2	8	0	3275	52	205	0	13	0
8314	0	0	0	0	0	0	0	16	9	1	0	0
8579	0	0	1	3	1	3	5	1089	558	11	11	8
8654	0	0	2	2	1	3	2	1043	539	27	20	7
8680	0	0	0	0	0	20	54	20	31	12	6	37
8964	0	0	0	0	0	2	9	13	4	6	1	26
9489	0	0	0	1	0	0	1	3	31	1196	223	803
9520	0	0	0	1	0	0	0	1	35	1301	217	82
9736	0	0	0	0	0	1	6	0	1	1	0	1066
9797	0	0	0	1	0	0	1	0	8	204	23	893
10068	0	0	0	2	0	5	0	0	0	31	8	691
10207	0	0	0	0	0	0	0	1	0	0	1	2
10264	0	0	0	0	0	0	4	1	1	1	3	0

Table 21: Matrix of supersymmetry fractions $q(3, \frac{7}{2}|2, 3)$ at $n_{B\,\max} = 18$.

						$(2,4)$						
$(3,7/2)$	1394	2754	4433	6319	6611	6944	7553	7863	8169	8218	8363	8424
1006	2264	75	7	1	0	0	0	0	0	0	0	0
2172	970	1965	82	7	0	1	0	0	0	0	0	0
3662	88	1145	1798	75	0	15	0	0	0	0	2	3
5463	10	89	1261	1578	1	175	0	0	1	1	14	25
6093	0	0	0	0	0	0	0	0	0	0	0	0
6613	0	0	0	0	2234	0	1	2	0	0	0	0
6628	0	0	0	1	2231	0	1	2	0	0	0	1
6765	0	4	32	1030	0	2738	1	0	1	3	12	17
7546	0	0	0	0	1	3	2171	35	2	4	0	0
7578	0	0	0	0	1	1	2086	35	1	3	0	0
7681	1	9	69	607	1	746	1	0	58	26	443	790
7876	0	0	0	3	0	6	85	1	7	0	0	2
8140	1	0	0	3	0	3	0	8	3279	64	77	188
8304	0	0	0	1	0	5	0	1	228	9	0	56
8314	1	0	0	0	0	0	0	2	243	78	2329	1174
8579	1	0	0	0	0	1	9	16	8	21	99	37
8654	0	0	1	1	0	2	8	12	1	38	2	37
8680	0	0	7	41	0	40	1	0	14	70	505	1176
8964	2	0	2	9	0	8	0	2	3	1	154	3
9489	0	0	0	1	1	0	0	2	1	3	8	25
9520	1	1	0	0	0	0	0	3	1	3	0	0
9736	1	0	0	0	0	0	1	0	4	0	2	9
9797	0	1	2	7	0	3	1	0	1	0	24	52
10068	3	2	4	20	0	11	2	0	2	0	19	94
10207	6	3	0	0	0	0	0	0	3	1	4	6
10264	0	0	0	1	0	1	1	0	0	0	0	2

Table 22: Matrix of supersymmetry fractions $q(3, \frac{7}{2}|2,4)$ at $n_{B\,\max} = 18$.