

The running times below are given in “minutes:seconds” format.

The tests were performed on a PC with two Intel Pentium4 3200 MHz with 4 GB RAM running Linux. It was possible to use just 1 processor and at most 2GB RAM.

To compare our implementation of NCGBASIS with classical algorithms for non-commutative Gröbner bases we have used:

- BERGMAN version 1.01,
- GBNP release 0.9.3 on GAP 4 release 4,
- OPAL version 1.0,
- SINGULAR 3-0-4 with `freegb.lib` version 1.9,
- MAGMA version 2.14-16.

For the timings we use the following shortcuts. We write

$t^\dagger$  when the system call exited with status  $\neq 0$  after the time  $t$ ;

$t^{\dagger\dagger}$  like in  $t^\dagger$ , but the dump contained the correct number of generators;

$t^\times$  when the process was terminated after the time  $t$ .

Example	Bergman	GNP	OPAL	Singular	MagmaGB	MagmaF4	#In	#Out
<code>braid3-11</code>	1:11	8:31	80:00 <sup>†</sup>	<b>0:17</b>	2:26	2:08	4	726
<code>braid4-11</code>	0:14	1:12	33:07	<b>0:04</b>	0:54	0:53	4	416
<code>lp1-10</code>	0:07	0:20	11:40	<b>0:01</b>	1:23	1:29	3	55
<code>lv2-15</code>	0:05	1:17	98:00 <sup>†</sup>	<b>0:02</b>	0:13	0:13	2	184
<code>ufn1h-11</code>	<b>0:02</b>	0:14	0:09	<b>0:02</b>	0:17	0:19	20	360
<code>ufn1h-14</code>	<b>0:09</b>	2:39	0:38	0:13	0:23	0:28	20	712
<code>ufn1h-15</code>	<b>0:14</b>	10:26	0:57	0:23	0:27	0:26	20	892

Example	Bergman	GBNP	Singular	MagmaGB	MagmaF4	#In	#Out
nilp3-6	<b>0:01</b>	0:07	<b>0:01</b>	0:16	0:15	192	110
nilp3-10	0:23	1:49	<b>0:03</b>	0:38	1:59	192	110
nilp4-6	1:22	1:12	<b>0:14</b>	1:55	1:42	2500	891
nilp4-7	<b>1:24</b>	7:32	1:40	6:48	5:09	2500	1238
nilp4s-8	13:52	74:54	0:57 <sup>†</sup>	27:29	<b>12:16</b>	1200	1415
metab5-10	<b>0:20</b>	13:58 <sup>††</sup>	0:22	3:08	3:16	360	76
metab5-11	27:23	14:42 <sup>†</sup>	<b>1:11</b>	30:43	30:06	360	113
metab5s-10	<b>0:32</b>	102:43 <sup>††</sup>	0:34	3:23	3:11	45	76
metab5s-11	27:33	25:27 <sup>†</sup>	<b>2:05</b>	30:39	28:04	45	113
tri4-7	0:48	1080:00 <sup>×</sup>	<b>0:08</b>	0:36	31:58	12240	672
tri4s-7	0:40	3:37	<b>0:07</b>	0:29	0:37	3060	672
ser-f4-15	16:05	85:48	<b>0:08</b>	15:03	1:58	9	43
ser-e6-12	0:49	5:39	<b>0:07</b>	0:32	0:37	20	76
ser-e6-13	2:36	14:52	<b>0:14</b>	1:29	1:16	20	79
ser-ha-10	0:04	7:82	<b>0:01</b>	0:27	0:20	5	33
ser-ha-15	63:21	246:00	<b>1:58</b>	21:15	16:45	5	112
ser-eha-12	0:56	3:44	<b>0:37</b>	8:08	8:36	6	126
ser-eha-13	72:50	34:53	<b>4:08</b>	35:38	35:21	6	174
ufn3-6	<b>0:31</b>	1:43	0:23	0:40	0:28	125	1065
ufn3-8	2:18	9:33	2:20	1:14	<b>0:44</b>	125	1763
ufn3-10	5:24	20:37	3:25 <sup>†</sup>	1:57	<b>1:04</b>	125	2446