ACCURACY OF GHOST SERIES ($p = 5$ AND $N = 1$)

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Abstract. We present data showing how "accurate" the ghost series predictions are.

We present a series of tables on the first 9 coefficients of the ghost series for $p = 5$ and level $N = 1$. The tables take the form:

Table 0.1. Sample (separated) table

k	$m_i(k)$	relative loc. of zeros			
⋮	⋮				⋮
20	0				6, 6, 5, 5, 4, ...
22	0				6, 6, 5, 5, 4, ...
24	1			**9**	6, 5, 5, 4, ...
26	1			**9**	6, 5, 5, 4, ...
28	2		**10**	**7**	5, 5, 4, ...
30	3	**11**	**10**	**8**	5, 4, ...
32	2		**16**	**13**	6, 5, 4, ...
34	0				6, 6, 5, 5, 4, ...
36	1			**14**	6, 5, 5, 4, ...
38	0				6, 6, 5, 5, 4, ...
40	0				6, 6, 5, 5, 4, ...
⋮	⋮				⋮

The first column is a list of (even) integers k. The second column is the multiplicity of k as a zero of the ghost series in the i-th index. The third column is the (decreasing) list of numbers $v_p(w_\kappa - w_k)$ where κ runs over the finitely many solutions to $\mathrm{tr}(\wedge^i U_p)(\kappa) = 0$. For a given k, if $m_i(k) > 0$ then we have bolded, underlined and separated out the largest $m_i(k)$-many values in the third column to illustrate the link between the "ghost zeros" and the true zeros of the characteristic series of U_p.

The data is truncated in the following two ways. First, list of k are exactly those within 20 of some predicted zero of the ghost coefficient. Second, the number of terms in the third column is always exactly two more than the highest multiplicity of a ghost zero.

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1. The tables on component 0

Here we collect the data for the component of weights $k \equiv 0 \bmod 4$ in the 5-adic weight space.

Table 1.1. Coefficient $i = 1$ for $p = 5$ and tame level $N = 1$ (component = 0)

k	pred. mult.	rel. pos. true zeros
4	0	1, 0, 0, ...
8	1	**3** 0, 0, ...
12	0	1, 0, 0, ...
16	0	1, 0, 0, ...
20	0	1, 0, 0, ...
24	0	1, 0, 0, ...
28	0	2, 0, 0, ...

Table 1.2. Coefficient $i = 2$ for $p = 5$ and tame level $N = 1$ (component = 0)

k	pred. mult.	rel. pos. true zeros
4	0	1, 1, 1, ...
8	1	**3** 1, 1, ...
12	1	**3** 1, 1, ...
16	1	**5** 1, 1, ...
20	1	**7** 1, 1, ...
24	0	1, 1, 1, ...
28	0	2, 1, 1, ...
32	0	2, 1, 1, ...
36	0	2, 1, 1, ...
40	0	2, 1, 1, ...

TABLE 1.3. Coefficient $i = 3$ for $p = 5$ and tame level $N = 1$ (component = 0)

k	pred. mult.	rel. pos. true zeros
4	0	2, 1, 1, 1, ...
8	0	2, 1, 1, 1, ...
12	1	**3** 2, 1, 1, ...
16	2	**5** **4** 1, 1, ...
20	2	**7** **6** 1, 1, ...
24	1	**8** 1, 1, 1, ...
28	1	**11** 1, 1, 1, ...
32	1	**12** 2, 1, 1, ...
36	0	2, 2, 1, 1, ...
40	0	2, 2, 1, 1, ...
44	0	2, 1, 1, 1, ...
48	0	2, 1, 1, 1, ...
52	0	2, 2, 1, 1, ...

TABLE 1.4. Coefficient $i = 4$ for $p = 5$ and tame level $N = 1$ (component = 0)

k	pred. mult.	rel. pos. true zeros
4	0	2, 2, 2, 1, 1, ...
8	0	2, 2, 1, 1, 1, ...
12	0	2, 2, 1, 1, 1, ...
16	2	**5** **4** 2, 1, 1, ...
20	3	**7** **6** **3** 2, 1, ...
24	2	**8** **5** 2, 1, 1, ...
28	2	**11** **8** 1, 1, 1, ...
32	2	**13** **11** 1, 1, 1, ...
36	1	**12** 2, 2, 1, 1, ...
40	1	**13** 2, 2, 2, 1, ...
44	1	**15** 2, 2, 1, 1, ...
48	0	2, 2, 1, 1, 1, ...
52	0	2, 2, 1, 1, 1, ...
56	0	2, 2, 2, 1, 1, ...
60	0	2, 2, 2, 2, 1, ...
64	0	2, 2, 2, 1, 1, ...

TABLE 1.5. Coefficient $i = 5$ for $p = 5$ and tame level $N = 1$ (component = 0)

k	pred. mult.	rel. pos. true zeros			
-4	0				2, 2, 2, 2, 1, ...
0	0				2, 2, 2, 2, 2, ...
4	0				2, 2, 2, 2, 2, ...
8	0				2, 2, 2, 2, 1, ...
12	0				2, 2, 2, 2, 1, ...
16	1			**5**	2, 2, 2, 1, ...
20	3	**7**	**6**	**3**	2, 2, ...
24	3	**8**	**5**	**3**	2, 2, ...
28	3	**11**	**8**	**5**	2, 1, ...
32	3	**13**	**11**	**7**	2, 1, ...
36	2		**13**	**10**	2, 2, 1, ...
40	2		**13**	**12**	2, 2, 2, ...
44	2		**15**	**13**	2, 2, 2, ...
48	1			**15**	2, 2, 2, 1, ...
52	1			**17**	2, 2, 2, 1, ...
56	1			**20**	2, 2, 2, 1, ...
60	0				2, 2, 2, 2, 2, ...
64	0				2, 2, 2, 2, 2, ...
68	0				2, 2, 2, 2, 1, ...
72	0				2, 2, 2, 2, 1, ...
76	0				2, 2, 2, 2, 1, ...

TABLE 1.6. Coefficient $i = 6$ for $p = 5$ and tame level $N = 1$ (component = 0)

k	pred. mult.	rel. pos. true zeros				
4	0					2, 2, 2, 2, 2, 2, ...
8	0					2, 2, 2, 2, 2, 2, ...
12	0					2, 2, 2, 2, 2, 2, ...
16	0					2, 2, 2, 2, 2, 1, ...
20	2			**7**	**6**	2, 2, 2, 2, ...
24	3		**8**	**5**	**3**	2, 2, 2, ...
28	4	**11**	**8**	**5**	**3**	2, 2, ...
32	4	**13**	**11**	**7**	**6**	2, 2, ...
36	3		**13**	**10**	**9**	2, 2, 1, ...
40	3		**12.5**	**12.5**	**11**	2, 2, 2, ...
44	3		**15**	**13**	**12**	2, 2, 2, ...
48	2			**15**	**13**	2, 2, 2, 2, ...
52	2			**17**	**16**	2, 2, 2, 2, ...
56	2			**20**	**19**	2, 2, 2, 1, ...
60	1				**21**	2, 2, 2, 2, 2, ...
64	1				**22**	2, 2, 2, 2, 2, ...
68	1				**23**	2, 2, 2, 2, 2, ...
72	0					2, 2, 2, 2, 2, 2, ...
76	0					2, 2, 2, 2, 2, 1, ...
80	0					2, 2, 2, 2, 2, 2, ...
84	0					2, 2, 2, 2, 2, 2, ...
88	0					2, 2, 2, 2, 2, 2, ...

TABLE 1.7. Coefficient $i = 7$ for $p = 5$ and tame level $N = 1$ (component = 0)

k	pred. mult.	rel. pos. true zeros					
4	0						2, 2, 2, 2, 2, 2, 2, ...
8	0						2, 2, 2, 2, 2, 2, 2, ...
12	0						2, 2, 2, 2, 2, 2, 2, ...
16	0						2, 2, 2, 2, 2, 2, 2, ...
20	1					**7**	2, 2, 2, 2, 2, 2, ...
24	2				**8**	**5**	2, 2, 2, 2, 2, ...
28	4		**11**	**8**	**5**	**3**	2, 2, 2, ...
32	5	**13**	**11**	**7**	**6**	**3**	2, 2, ...
36	4		**13**	**10**	**9**	**5**	2, 2, 2, ...
40	4		**13**	**13**	**11**	**8**	2, 2, 2, ...
44	4		**15**	**12.5**	**12.5**	**11**	2, 2, 2, ...
48	3			**15**	**13**	**12**	2, 2, 2, 2, ...
52	3			**17**	**16**	**13**	2, 2, 2, 2, ...
56	3			**20**	**19**	**15**	2, 2, 2, 2, ...
60	2				**21**	**18**	2, 2, 2, 2, 2, ...
64	2				**23**	**21**	2, 2, 2, 2, 2, ...
68	2				**23**	**22**	2, 2, 2, 2, 2, ...
72	1					**23**	2, 2, 2, 2, 2, 2, ...
76	1					**25**	2, 2, 2, 2, 2, 2, ...
80	1					**28**	2, 2, 2, 2, 2, 2, ...
84	0						2, 2, 2, 2, 2, 2, 2, ...
88	0						2, 2, 2, 2, 2, 2, 2, ...
92	0						2, 2, 2, 2, 2, 2, 2, ...
96	0						2, 2, 2, 2, 2, 2, 2, ...
100	0						2, 2, 2, 2, 2, 2, 2, ...

TABLE 1.8. Coefficient $i = 8$ for $p = 5$ and tame level $N = 1$ (component = 0)

k	pred. mult.	rel. pos. true zeros					
4	0						2, 2, 2, 2, 2, 2, 2, ...
8	0						2, 2, 2, 2, 2, 2, 2, ...
12	0						2, 2, 2, 2, 2, 2, 2, ...
16	0						2, 2, 2, 2, 2, 2, 2, ...
20	0						2, 2, 2, 2, 2, 2, 2, ...
24	1					**8**	2, 2, 2, 2, 2, 2, ...
28	3			**11**	**8**	**5**	2, 2, 2, 2, ...
32	5	**13**	**11**	**7**	**6**	**3**	2, 2, ...
36	5	**13**	**10**	**9**	**5**	**4**	2, 2, ...
40	5	**13**	**13**	**11**	**8**	**7**	2, 2, ...
44	5	**14**	**13**	**13**	**11**	**9**	2, 2, ...
48	4		**15**	**12.5**	**12.5**	**11**	2, 2, 2, ...
52	4		**17**	**16**	**13**	**12**	2, 2, 2, ...
56	4		**20**	**19**	**15**	**14**	2, 2, 2, ...
60	3			**21**	**18**	**17**	2, 2, 2, 2, ...
64	3			**23**	**21**	**19**	2, 2, 2, 2, ...
68	3			**22.5**	**22.5**	**21**	2, 2, 2, 2, ...
72	2				**23**	**22**	2, 2, 2, 2, 2, ...
76	2				**25**	**24**	2, 2, 2, 2, 2, ...
80	2				**28**	**27**	2, 2, 2, 2, 2, ...
84	1					**29**	2, 2, 2, 2, 2, 2, ...
88	1					**31**	2, 2, 2, 2, 2, 2, ...
92	1					**32**	2, 2, 2, 2, 2, 2, ...
96	0						2, 2, 2, 2, 2, 2, 2, ...
100	0						2, 2, 2, 2, 2, 2, 2, ...
104	0						2, 2, 2, 2, 2, 2, 2, ...
108	0						2, 2, 2, 2, 2, 2, 2, ...
112	0						2, 2, 2, 2, 2, 2, 2, ...

TABLE 1.9. Coefficient $i = 9$ for $p = 5$ and tame level $N = 1$ (component = 0)

k	pred. mult.	rel. pos. true zeros						
8	0							2, 2, 2, 2, 2, 2, 2, 2, ...
12	0							2, 2, 2, 2, 2, 2, 2, 2, ...
16	0							2, 2, 2, 2, 2, 2, 2, 2, ...
20	0							2, 2, 2, 2, 2, 2, 2, 2, ...
24	0							2, 2, 2, 2, 2, 2, 2, 2, ...
28	2					**11**	**8**	2, 2, 2, 2, 2, 2, ...
32	4			**13**	**11**	**7**	**6**	2, 2, 2, 2, ...
36	5		**13**	**10**	**9**	**5**	**4**	2, 2, 2, ...
40	6	**13**	**13**	**11**	**8**	**7**	**3**	2, 2, ...
44	6	**15**	**13**	**13**	**11**	**9**	**6**	2, 2, ...
48	5		**14**	**13**	**13**	**11**	**9**	2, 2, 2, ...
52	5		**17**	**16**	**12.5**	**12.5**	**11**	2, 2, 2, ...
56	5		**20**	**19**	**15**	**14**	**12**	2, 2, 2, ...
60	4			**21**	**18**	**17**	**13**	2, 2, 2, 2, ...
64	4			**23**	**21**	**19**	**16**	2, 2, 2, 2, ...
68	4			**23**	**23**	**21**	**19**	2, 2, 2, 2, ...
72	3				**22.5**	**22.5**	**21**	2, 2, 2, 2, 2, ...
76	3				**25**	**24**	**22**	2, 2, 2, 2, 2, ...
80	3				**28**	**27**	**23**	2, 2, 2, 2, 2, ...
84	2					**29**	**26**	2, 2, 2, 2, 2, 2, ...
88	2					**31**	**29**	2, 2, 2, 2, 2, 2, ...
92	2					**33**	**31**	2, 2, 2, 2, 2, 2, ...
96	1						**32**	2, 2, 2, 2, 2, 2, 2, ...
100	1						**33**	2, 2, 2, 2, 2, 2, 2, ...
104	1						**36**	2, 2, 2, 2, 2, 2, 2, ...
108	0							2, 2, 2, 2, 2, 2, 2, 2, ...
112	0							2, 2, 2, 2, 2, 2, 2, 2, ...
116	0							2, 2, 2, 2, 2, 2, 2, 2, ...
120	0							2, 2, 2, 2, 2, 2, 2, 2, ...
124	0							2, 2, 2, 2, 2, 2, 2, 2, ...

2. The tables on component 2

Here we collect the data for the component of weights $k \equiv 2 \bmod 4$ in the 5-adic weight space.

Table 2.1. Coefficient $i = 1$ for $p = 5$ and tame level $N = 1$ (component = 2)

k	pred. mult.	rel. pos. true zeros
2	0	1, 1, 0, ...
6	0	1, 1, 0, ...
10	1	**3** 1, 0, ...
14	1	**5** 1, 0, ...
18	0	1, 1, 0, ...
22	0	1, 1, 0, ...
26	0	1, 1, 0, ...
30	0	2, 1, 0, ...
34	0	2, 1, 0, ...

Table 2.2. Coefficient $i = 2$ for $p = 5$ and tame level $N = 1$ (component = 2)

k	pred. mult.	rel. pos. true zeros
2	0	2, 1, 1, 1, ...
6	0	2, 1, 1, 1, ...
10	1	**3** 1, 1, 1, ...
14	2	**5** **3** 1, 1, ...
18	1	**5** 1, 1, 1, ...
22	1	**7** 1, 1, 1, ...
26	1	**9** 1, 1, 1, ...
30	0	2, 1, 1, 1, ...
34	0	2, 2, 1, 1, ...
38	0	2, 1, 1, 1, ...
42	0	2, 1, 1, 1, ...
46	0	2, 1, 1, 1, ...

TABLE 2.3. Coefficient $i = 3$ for $p = 5$ and tame level $N = 1$ (component = 2)

k	pred. mult.	rel. pos. true zeros
2	0	2, 2, 1, 1, ...
6	0	2, 2, 1, 1, ...
10	0	2, 1, 1, 1, ...
14	2	**5** **3** 2, 1, ...
18	2	**5** **3** 2, 1, ...
22	2	**7** **6** 1, 1, ...
26	2	**9** **8** 1, 1, ...
30	1	**11** 1, 1, 1, ...
34	1	**12** 2, 2, 1, ...
38	1	**13** 2, 2, 1, ...
42	0	2, 2, 1, 1, ...
46	0	2, 2, 1, 1, ...
50	0	2, 1, 1, 1, ...
54	0	2, 2, 2, 1, ...
58	0	2, 2, 2, 1, ...

TABLE 2.4. Coefficient $i = 4$ for $p = 5$ and tame level $N = 1$ (component = 2)

k	pred. mult.	rel. pos. true zeros
2	0	2, 2, 2, 2, 1, ...
6	0	2, 2, 2, 2, 1, ...
10	0	2, 2, 2, 1, 1, ...
14	1	**5** 2, 2, 1, 1, ...
18	2	**5** **3** 2, 2, 1, ...
22	3	**7** **6** **3** 2, 1, ...
26	3	**9** **8** **5** 2, 1, ...
30	2	**11** **7** 2, 1, 1, ...
34	2	**13** **11** 2, 1, 1, ...
38	2	**13** **12** 2, 2, 1, ...
42	1	**13** 2, 2, 2, 1, ...
46	1	**15** 2, 2, 2, 1, ...
50	1	**17** 2, 2, 1, 1, ...
54	0	2, 2, 2, 1, 1, ...
58	0	2, 2, 2, 2, 1, ...
62	0	2, 2, 2, 2, 1, ...
66	0	2, 2, 2, 2, 1, ...
70	0	2, 2, 2, 1, 1, ...

TABLE 2.5. Coefficient $i = 5$ for $p = 5$ and tame level $N = 1$ (component = 2)

k	pred. mult.	rel. pos. true zeros				
2	0					2, 2, 2, 2, 2, 2, ...
6	0					2, 2, 2, 2, 2, 2, ...
10	0					2, 2, 2, 2, 2, 1, ...
14	0					2, 2, 2, 2, 1, 1, ...
18	1				**5**	2, 2, 2, 2, 1, ...
22	3		**7**	**6**	**3**	2, 2, 2, ...
26	4	**9**	**8**	**5**	**4**	2, 2, ...
30	3		**11**	**7**	**6**	2, 2, 1, ...
34	3		**13**	**11**	**9**	2, 1, 1, ...
38	3		**12.5**	**12.5**	**11**	2, 2, 1, ...
42	2			**13**	**12**	2, 2, 2, 2, ...
46	2			**15**	**14**	2, 2, 2, 2, ...
50	2			**17**	**16**	2, 2, 2, 1, ...
54	1				**19**	2, 2, 2, 1, 1, ...
58	1				**21**	2, 2, 2, 2, 1, ...
62	1				**22**	2, 2, 2, 2, 2, ...
66	0					2, 2, 2, 2, 2, 2, ...
70	0					2, 2, 2, 2, 2, 1, ...
74	0					2, 2, 2, 2, 1, 1, ...
78	0					2, 2, 2, 2, 2, 1, ...
82	0					2, 2, 2, 2, 2, 2, ...

TABLE 2.6. Coefficient $i = 6$ for $p = 5$ and tame level $N = 1$ (component = 2)

k	pred. mult.	rel. pos. true zeros				
2	0					2, 2, 2, 2, 2, 2, ...
6	0					2, 2, 2, 2, 2, 2, ...
10	0					2, 2, 2, 2, 2, 2, ...
14	0					2, 2, 2, 2, 2, 2, ...
18	0					2, 2, 2, 2, 2, 2, ...
22	2			**7**	**6**	2, 2, 2, 2, ...
26	4	**9**	**8**	**5**	**4**	2, 2, ...
30	4	**11**	**7**	**6**	**3**	2, 2, ...
34	4	**13**	**11**	**9**	**5**	2, 2, ...
38	4	**13**	**13**	**11**	**9**	2, 2, ...
42	3		**12.5**	**12.5**	**11**	2, 2, 2, ...
46	3		**15**	**14**	**12**	2, 2, 2, ...
50	3		**17**	**16**	**13**	2, 2, 2, ...
54	2			**19**	**15**	2, 2, 2, 2, ...
58	2			**21**	**19**	2, 2, 2, 2, ...
62	2			**23**	**21**	2, 2, 2, 2, ...
66	1				**22**	2, 2, 2, 2, 2, ...
70	1				**23**	2, 2, 2, 2, 2, ...
74	1				**25**	2, 2, 2, 2, 2, ...
78	0					2, 2, 2, 2, 2, 2, ...
82	0					2, 2, 2, 2, 2, 2, ...
86	0					2, 2, 2, 2, 2, 2, ...
90	0					2, 2, 2, 2, 2, 2, ...
94	0					2, 2, 2, 2, 2, 2, ...

TABLE 2.7. Coefficient $i = 7$ for $p = 5$ and tame level $N = 1$ (component = 2)

k	pred. mult.	rel. pos. true zeros					
2	0						2, 2, 2, 2, 2, 2, 2, ...
6	0						2, 2, 2, 2, 2, 2, 2, ...
10	0						2, 2, 2, 2, 2, 2, 2, ...
14	0						2, 2, 2, 2, 2, 2, 2, ...
18	0						2, 2, 2, 2, 2, 2, 2, ...
22	1					**7**	2, 2, 2, 2, 2, 2, ...
26	3			**9**	**8**	**5**	2, 2, 2, 2, ...
30	4		**11**	**7**	**6**	**3**	2, 2, 2, ...
34	5	**13**	**11**	**9**	**5**	**3**	2, 2, ...
38	5	**13**	**13**	**11**	**9**	**5**	2, 2, ...
42	4		**13**	**13**	**11**	**8**	2, 2, 2, ...
46	4		**15**	**13**	**13**	**10**	2, 2, 2, ...
50	4		**17**	**16**	**13**	**12**	2, 2, 2, ...
54	3			**19**	**15**	**13**	2, 2, 2, 2, ...
58	3			**21**	**19**	**15**	2, 2, 2, 2, ...
62	3			**23**	**21**	**18**	2, 2, 2, 2, ...
66	2				**23**	**20**	2, 2, 2, 2, 2, ...
70	2				**23**	**22**	2, 2, 2, 2, 2, ...
74	2				**25**	**23**	2, 2, 2, 2, 2, ...
78	1					**25**	2, 2, 2, 2, 2, 2, ...
82	1					**28**	2, 2, 2, 2, 2, 2, ...
86	1					**30**	2, 2, 2, 2, 2, 2, ...
90	0						2, 2, 2, 2, 2, 2, 2, ...
94	0						2, 2, 2, 2, 2, 2, 2, ...
98	0						2, 2, 2, 2, 2, 2, 2, ...
102	0						2, 2, 2, 2, 2, 2, 2, ...
106	0						2, 2, 2, 2, 2, 2, 2, ...

TABLE 2.8. Coefficient $i = 8$ for $p = 5$ and tame level $N = 1$ (component = 2)

k	pred. mult.	rel. pos. true zeros
6	0	2, 2, 2, 2, 2, 2, 2, 2, ...
10	0	2, 2, 2, 2, 2, 2, 2, 2, ...
14	0	2, 2, 2, 2, 2, 2, 2, 2, ...
18	0	2, 2, 2, 2, 2, 2, 2, 2, ...
22	0	2, 2, 2, 2, 2, 2, 2, 2, ...
26	2	**9** **8** 2, 2, 2, 2, 2, 2, ...
30	3	**11** **7** **6** 2, 2, 2, 2, 2, ...
34	5	**13** **11** **9** **5** **3** 2, 2, 2, ...
38	6	**13** **13** **11** **9** **5** **3** 2, 2, ...
42	5	**13** **13** **11** **8** **7** 2, 2, 2, ...
46	5	**14** **14** **13** **10** **9** 2, 2, 2, ...
50	5	**17** **16** **12.5** **12.5** **11** 2, 2, 2, ...
54	4	**19** **15** **13** **12** 2, 2, 2, 2, ...
58	4	**21** **19** **15** **13** 2, 2, 2, 2, ...
62	4	**23** **21** **18** **17** 2, 2, 2, 2, ...
66	3	**23** **20** **19** 2, 2, 2, 2, 2, ...
70	3	**22.5** **22.5** **21** 2, 2, 2, 2, 2, ...
74	3	**25** **23** **22** 2, 2, 2, 2, 2, ...
78	2	**25** **23** 2, 2, 2, 2, 2, 2, ...
82	2	**28** **27** 2, 2, 2, 2, 2, 2, ...
86	2	**30** **29** 2, 2, 2, 2, 2, 2, ...
90	1	**31** 2, 2, 2, 2, 2, 2, 2, ...
94	1	**32** 2, 2, 2, 2, 2, 2, 2, ...
98	1	**33** 2, 2, 2, 2, 2, 2, 2, ...
102	0	2, 2, 2, 2, 2, 2, 2, 2, ...
106	0	2, 2, 2, 2, 2, 2, 2, 2, ...
110	0	2, 2, 2, 2, 2, 2, 2, 2, ...
114	0	2, 2, 2, 2, 2, 2, 2, 2, ...
118	0	2, 2, 2, 2, 2, 2, 2, 2, ...

TABLE 2.9. Coefficient $i = 9$ for $p = 5$ and tame level $N = 1$ (component = 2)

k	pred. mult.	rel. pos. true zeros
6	0	3, 2, 2, 2, 2, 2, 2, 2, ...
10	0	3, 2, 2, 2, 2, 2, 2, 2, ...
14	0	2, 2, 2, 2, 2, 2, 2, 2, ...
18	0	2, 2, 2, 2, 2, 2, 2, 2, ...
22	0	2, 2, 2, 2, 2, 2, 2, 2, ...
26	1	**9** 2, 2, 2, 2, 2, 2, 2, ...
30	2	**11** **7** 2, 2, 2, 2, 2, 2, ...
34	4	**13** **11** **9** **5** 2, 2, 2, 2, ...
38	6	**13** **13** **11** **9** **5** **3** 2, 2, ...
42	6	**13** **13** **11** **8** **7** **3** 2, 2, ...
46	6	**15** **14** **13** **10** **9** **6** 2, 2, ...
50	6	**17** **15** **13** **13** **11** **8** 2, 2, ...
54	5	**19** **15** **12.5** **12.5** **11** 2, 2, 2, ...
58	5	**21** **19** **15** **13** **12** 2, 2, 2, ...
62	5	**23** **21** **18** **17** **13** 2, 2, 2, ...
66	4	**23** **20** **19** **16** 2, 2, 2, 2, ...
70	4	**23** **23** **21** **18** 2, 2, 2, 2, ...
74	4	**25** **22.5** **22.5** **21** 2, 2, 2, 2, ...
78	3	**25** **23** **22** 2, 2, 2, 2, 2, ...
82	3	**28** **27** **23** 2, 2, 2, 2, 2, ...
86	3	**30** **29** **26** 2, 2, 2, 2, 2, ...
90	2	**31** **28** 2, 2, 2, 2, 2, 2, ...
94	2	**33** **31** 2, 2, 2, 2, 2, 2, ...
98	2	**33** **32** 2, 2, 2, 2, 2, 2, ...
102	1	**33** 2, 2, 2, 2, 2, 2, 2, ...
106	1	**36** 2, 2, 2, 2, 2, 2, 2, ...
110	1	**38** 2, 2, 2, 2, 2, 2, 2, ...
114	0	2, 2, 2, 2, 2, 2, 2, 2, ...
118	0	2, 2, 2, 2, 2, 2, 2, 2, ...
122	0	2, 2, 2, 2, 2, 2, 2, 2, ...
126	0	3, 2, 2, 2, 2, 2, 2, 2, ...
130	0	3, 3, 2, 2, 2, 2, 2, 2, ...