

---

	$\backslash N$	50	100	150	$O(h^6)$
Dynamo	$P_2^S E^S$	-24.2079 + 11.4618 <i>i</i>	-23.8640 + 12.4442 <i>i</i>	-23.8070 + 12.6184 <i>i</i>	-23.7628 + 12.7560 <i>i</i>
	$P_2^S E^A$	.336198 + 0 <i>i</i>	.228924 + 0 <i>i</i>	.207959 + 0 <i>i</i>	.190940 + 0 <i>i</i>
	$P_2^A E^S$	-213.548 + 361.937 <i>i</i>	-215.513 + 359.352 <i>i</i>	-215.854 + 358.959 <i>i</i>	-216.121 + 358.663 <i>i</i>
	$P_2^A E^A$	-238.125 + 361.740 <i>i</i>	-239.940 + 359.079 <i>i</i>	-240.258 + 358.688 <i>i</i>	-240.507 + 358.397 <i>i</i>
Adjoint	$P_2^S E^A$	-24.3780 + 14.0789 <i>i</i>	-23.9180 + 13.1022 <i>i</i>	-23.8318 + 12.9113 <i>i</i>	-23.7627 + 12.7563 <i>i</i>
	$P_2^S E^S$	-.958287 + 0 <i>i</i>	-.100811 + 0 <i>i</i>	.0612216 + 0 <i>i</i>	.191576 + 0 <i>i</i>
	$P_2^A E^A$	-213.459 + 361.992 <i>i</i>	-215.468 + 359.376 <i>i</i>	-215.831 + 358.972 <i>i</i>	-216.119 + 358.666 <i>i</i>
	$P_2^A E^S$	-238.186 + 361.364 <i>i</i>	-239.940 + 358.987 <i>i</i>	-240.255 + 358.648 <i>i</i>	-240.505 + 358.398 <i>i</i>

---

TABLE 7

~~TABLE 1~~. Growth rate eigenvalues of largest real part for all solution symmetries of the dynamo and adjoint systems with the KR velocity  $p = 3\pi$ ,  $\epsilon_1 = .03$ ,  $\epsilon_2 = \epsilon_3 = .04$ , and  $R_m = 4000$ . Calculations employed truncation level  $L = 14$ .

---

	$\backslash N$	100	150	200	$O(h^6)$	
$R_m = 4000$	$P_2^S E^S$	-30.3793 + 16.2674 $i$	-29.9996 + 17.0899 $i$	-29.9357 + 17.2377 $i$	-29.8860 + 17.3549 $i$	
	$P_2^S E^A$	-20.5576 + 0 $i$	-19.9658 + 0 $i$	-19.8682 + 0 $i$	-19.7929 + 0 $i$	
	$P_2^A E^S$	-233.990 + 3780.19 $i$	-234.099 + 3779.74 $i$	-234.119 + 3779.66 $i$	-234.136 + 3779.59 $i$	
	$P_2^A E^A$	-223.165 + 3761.61 $i$	-223.089 + 3761.07 $i$	-223.075 + 3760.97 $i$	-223.064 + 3760.89 $i$	
	$R_m = -4000$	$P_2^S E^A$	-30.5006 + 18.0509 $i$	-30.0424 + 17.5353 $i$	-29.9557 + 17.4356 $i$	-29.8860 + 17.3549 $i$
		$P_2^S E^S$	-19.8549 + 0 $i$	-19.8145 + 0 $i$	-19.8029 + 0 $i$	-19.7926 + 0 $i$
$P_2^A E^A$		-234.025 + 3780.29 $i$	-234.108 + 3779.77 $i$	-234.123 + 3779.67 $i$	-234.136 + 3779.59 $i$	
$P_2^A E^S$		-223.269 + 3761.64 $i$	-223.115 + 3761.08 $i$	-223.087 + 3760.97 $i$	-223.063 + 3760.89 $i$	

TABLE 8

TABLE 1. Growth rate eigenvalues of largest real part for all solution symmetries of the comparison problem with the KR velocity  $p = 3\pi$ ,  $\epsilon_1 = .03$ ,  $\epsilon_2 = \epsilon_3 = .04$ , and with  $|R_m| = 4000$ . Calculations employed truncation level  $L = 14$ .

---

Dynamo system									
$d \setminus N$		$E^A, R_m > 0$			$O(h^6)$	$E^S, R_m < 0$			$O(h^6)$
		50	100	150		50	100	150	
1	3832.80	3882.67	3892.80	3901.11	-4755.81	-4576.20	-4543.58	-4517.63	
1.0101	3562.60	3598.60	3605.76	3611.60	-4489.79	-4323.42	-4293.13	-4269.01	
1.0526	2865.66	2877.76	2880.05	2881.91	-3748.32	-3614.10	-3589.59	-3570.06	
1.1111	2413.54	2417.21	2417.91	2418.47	-3189.99	-3075.96	-3055.15	-3038.56	
1.4286	1814.39	1813.46	1813.30	1813.19	-2210.43	-2132.40	-2118.26	-2107.02	
2.5	1669.13	1667.94	1667.74	1667.59	-1803.68	-1745.13	-1734.53	-1726.11	
10	1660.62	1659.42	1659.22	1659.06	-1732.86	-1677.91	-1667.96	-1660.04	
$\infty$	1660.61	1659.41	1659.21	1659.05	-1731.78	-1676.89	-1666.95	-1659.04	

Comparison system									
$d \setminus N$		$E^A, R_m > 0$			$O(h^6)$	$E^S, R_m < 0$			$O(h^6)$
		50	100	150		50	100	150	
1	16597.1	20645.9	21631.8	22473.6	-72935.4	-33463.7	-25881.6	-19754.6	
1.0101	13568.0	15218.8	15547.2	15815.0	-53047.4	-19313.8	-17107.6	-16251.8	
1.0526	7386.99	7407.25	7408.38	7408.71	-9289.50	-7766.37	-7561.32	-7414.60	
1.1111	4771.18	4744.58	4740.02	4736.44	-5231.06	-4851.41	-4786.82	-4736.44	
1.4286	2320.52	2316.34	2315.72	2315.27	-2445.28	-2346.99	-2329.29	-2315.25	
2.5	1736.98	1735.51	1735.27	1735.09	-1813.67	-1754.35	-1743.61	-1735.08	
10	1661.62	1660.42	1660.22	1660.06	-1732.86	-1677.92	-1667.96	-1660.05	
$\infty$	1660.61	1659.41	1659.21	1659.05	-1731.78	-1676.89	-1666.95	-1659.04	

TABLE 3. Behaviour of  $R_m^c$  ( $\omega = 0$ ) with varying  $d$ , for the KR velocity  $p = 3\pi$ ,  $\epsilon_1 = .03$ ,  $\epsilon_2 = .04$ ,  $\epsilon_3 = .04$ . Solutions of both the dynamo and comparison systems are detailed; the convergence of the  $E^A$  eigenvalues for  $R_m > 0$  and the  $E^S$  eigenvalues for  $R_m < 0$ , as  $d \rightarrow \infty$ , is shown for each system, as is the convergence of the two systems themselves in the same limit. Calculations employed truncation level  $L = 16$ .

---

9, 10

---

Conducting core								
$b \setminus N$	$E^A$			$O(h^6)$	$E^S$			$O(h^6)$
	51	101	151	51	101	151		
0.0	3832.80	3882.67	3892.80	3901.11	-4755.81	-4576.20	-4543.58	-4517.63
0.1	4345.08	4431.85	4449.07	4463.35	-5459.60	-5197.39	-5152.26	-5116.21
0.2	4978.07	5106.47	5131.93	5153.01	-6229.69	-5855.74	-5795.02	-5747.50
0.3	5778.86	5952.26	5986.83	6014.52	-6842.98	-6409.90	-6341.47	-6290.37
0.4	6797.15	7011.44	7054.34	7008.09	-6948.52	-6634.42	-6582.28	-6367.43
0.5	7958.94	8171.57	8213.72	8234.97	-6704.78	-6577.42	-6553.99	-6534.55
0.6	8647.12	8757.94	8779.69	8796.70	-6716.09	-6699.26	-6695.01	-6691.97
0.7	8742.90	8726.59	8723.52	8721.10	-6090.50	-7323.53	-7398.10	-7494.48

  

Insulating core								
$b \setminus N$	$E^A$			$O(h^6)$	$E^S$			$O(h^6)$
	51	101	151	51	101	151		
0.0	3832.80	3882.67	3892.80	3901.11	-4755.81	-4576.20	-4543.58	-4517.63
0.1	4345.08	4431.85	4449.07	4463.35	-5459.60	-5197.39	-5152.26	-5116.21
0.1	4344.40	4431.16	4448.37	4462.65	-5445.94	-5186.71	-5142.02	-5106.33
0.2	4965.17	5092.63	5117.90	5138.83	-6115.40	-5771.77	-5715.25	-5670.83
0.3	5712.77	5879.90	5913.19	5939.85	-6545.86	-6193.44	-6135.95	-6092.55
0.4	6600.63	6795.49	6834.39	6794.86	-6629.00	-6380.79	-6338.42	-6199.73
0.5	7579.00	7765.92	7803.05	7821.45	-6633.46	-6511.34	-6488.83	-6470.34
0.6	8315.80	8430.37	8453.10	8470.81	-7090.48	-7048.25	-7039.45	-7032.71
0.7	8802.94	8818.46	8821.77	8824.30	-9045.48	-9055.03	-9055.60	-9056.34

TABLE 4.  $R_m^c$  for  $E^A$  and  $E^S$  solutions for the KR velocity  $p = 3\pi$ ,  $\epsilon_1 = .03$ ,  $\epsilon_2 = \epsilon_3 = .04$  with varying inner cores  $b$ . Both conducting and insulating inner cores are detailed. Calculations employed truncation level  $L = 16$ .

---

add 11, 12