## 1 CDR

- Imposing Dirichlet bc at the left boundary and Neumann at the right;
- Considering  $\epsilon = 0$ ;
- Type II fluxes ("non-conservative").

Table 1: Numerical results of pure diffusion for  $\phi(x) = \exp(x)$ ,  $\kappa(x) = 1$ , and u(x) = 0 (c1; uniform mesh;  $\epsilon = 0$ ).

	I	cond(A)	$A^{-1} \ge 0$	$E_{c,1}$	O <sub>c,1</sub>	E <sub>1</sub>	O <sub>1</sub>	$E_{\infty}$	$O_{\infty}$
	20	6.48E+02	$\checkmark$	8.76E-04		5.66E-04	_	7.61E-04	
$\mathbb{P}_1$	40	2.59E+03	$\checkmark$	2.14E-04	2.03	1.42E-04	2.00	1.92E-04	1.99
	80	1.04E+04	$\checkmark$	5.28E-05	2.02	3.54E-05	2.00	4.82E-05	1.99
	20	8.25E+02	✓	7.53E-05	_	1.40E-04	_	3.33E-04	_
$\mathbb{P}_2$	40	3.30E+03	$\checkmark$	9.55E-06	2.98	3.61E-05	1.95	8.64E-05	1.95
	80	1.32E+04	✓	1.20E-06	2.99	9.19E-06	1.97	2.20E-05	1.97
	20	1.02E+03	$\checkmark$	4.41E-06	_	6.53E-07	_	7.67E-07	_
$\mathbb{P}_3$	40	4.08E+03	$\checkmark$	2.78E-07	3.99	4.07E-08	4.01	5.30E-08	3.86
	80	1.63E+04	✓	1.75E-08	3.99	2.53E-09	4.01	3.47E-09	3.93
	20	1.18E+03	$\checkmark$	2.00E-07	_	2.39E-08	_	5.60E-08	_
$\mathbb{P}_4$	40	4.74E+03	$\checkmark$	6.36E-09	4.98	2.07E-09	3.53	5.53E-09	3.34
	80	1.89E+04	✓	2.01E-10	4.99	1.59E-10	3.70	4.06E-10	3.77
	20	1.35E+03	✓	8.78E-09	_	1.80E-09	_	2.09E-09	
$\mathbb{P}_5$	40	5.42E+03	$\checkmark$	1.40E-10	5.97	2.70E-11	6.06	3.07E-11	6.09
	80	2.17E+04	✓	2.24E-12	5.96	3.50E-13	6.27	4.77E-13	6.01

Table 2: Numerical results of pure diffusion for  $\phi(x) = \exp(x)$ ,  $\kappa(x) = 1$ , and u(x) = 0 (c2; uniform mesh;  $\epsilon = 0$ ).

	I	cond(A)	$A^{-1} \ge 0$	$E_{c,1}$	$O_{c,1}$	$E_1$	$O_1$	$E_{\infty}$	$O_{\infty}$
	20	1.28E+05	×	1.77E-02	_	1.03E+02		4.90E+02	
$\mathbb{P}_1$	40	1.50E+11	×	4.62E-03	1.94	2.37E+07	$\uparrow$	1.37E+08	$\uparrow$
	80	1.92E+17	×	1.18E-03	1.97	5.72E+13	$\uparrow$	3.69E+14	$\uparrow$
	20	1.00E+02	×	9.29E-04		3.54E-04		6.86E-04	_
$\mathbb{P}_2$	40	3.87E+02	×	1.22E-04	2.93	7.50E-05	2.24	1.18E-04	2.53
	80	1.54E+03	×	1.57E-05	2.96	1.86E-05	2.02	2.79E-05	2.09
	20	1.29E+02	$\checkmark$	4.15E-05	_	6.11E-06		1.72E-05	
$\mathbb{P}_3$	40	5.17E+02	$\checkmark$	2.68E-06	3.95	3.79E-07	4.01	1.15E-06	3.91
	80	2.07E+03	✓	1.70E-07	3.98	2.41E-08	3.97	7.40E-08	3.95
	20	1.88E+02	$\checkmark$	1.65E-06	_	2.54E-07		5.83E-07	
$\mathbb{P}_4$	40	7.50E+02	$\checkmark$	5.43E - 08	4.93	1.26E-08	4.33	2.36E-08	4.63
	80	3.00E+03	✓	1.74E-09	4.96	7.78E-10	4.02	1.18E-09	4.32
	20	2.00E+02	✓	1.24E-07	_	6.70E-09	_	2.10E-08	
$\mathbb{P}_5$	40	7.98E+02	$\checkmark$	2.02E-09	5.94	8.78E-11	6.25	3.72E-10	5.82
	80	3.19E+03	✓	3.23E-11	5.97	1.33E-12	6.04	6.28E-12	5.89

Table 3: Numerical results of pure diffusion for  $\phi(x) = \exp(x)$ ,  $\kappa(x) = 1$ , and u(x) = 0 (c1; uniform mesh;  $\epsilon = \frac{h}{2}$ ).

	I	cond(A)	$A^{-1} \ge 0$	$E_{c,1}$	O <sub>c,1</sub>	E <sub>1</sub>	O <sub>1</sub>	$E_{\infty}$	$O_{\infty}$
	20	6.48E+02	<b>✓</b>	4.26E-03	_	3.38E-02	_	6.63E-02	_
$\mathbb{P}_1$	40	2.59E+03	$\checkmark$	1.06E-03	2.01	1.70E-02	1.00	3.36E-02	0.98
	80	1.04E+04	$\checkmark$	2.65E-04	2.00	8.49E-03	1.00	1.69E-02	0.99
	20	8.75E+02	✓	1.15E-04		1.12E-03		2.13E-03	_
$\mathbb{P}_2$	40	3.40E+03	$\checkmark$	1.44E-05	3.00	2.81E-04	2.00	5.40E-04	1.98
	80	1.34E+04	✓	1.80E-06	3.00	7.03E-05	2.00	1.36E-04	1.99
	20	1.13E+03	$\checkmark$	4.73E-06	_	3.86E-05	_	7.34E-05	_
$\mathbb{P}_3$	40	4.29E+03	$\checkmark$	2.95E-07	4.00	4.82E-06	3.00	9.40E-06	2.96
	80	1.67E+04	$\checkmark$	1.84E-08	4.00	6.02E-07	3.00	1.19E-06	2.98
	20	1.50E+03	×	1.91E-07	_	6.55E-07	_	1.26E-06	_
$\mathbb{P}_4$	40	5.40E+03	×	5.98E-09	5.00	4.12E-08	3.99	8.14E-08	3.95
	80	2.03E+04	×	1.87E-10	5.00	2.57E-09	4.00	5.15E-09	3.98
	20	2.47E+03	×	7.90E-09	_	2.97E-08	_	6.22E-08	_
$\mathbb{P}_5$	40	7.96E+03	×	1.24E-10	6.00	1.10E-09	4.75	2.25E-09	4.79
	80	2.72E+04	×	1.96E-12	5.98	3.64E-11	4.92	7.35E-11	4.93

Table 4: Numerical results of pure diffusion for  $\phi(x) = \exp(x)$ ,  $\kappa(x) = 1$ , and u(x) = 0 (c2; uniform mesh;  $\epsilon = \frac{h}{2}$ ).

	I	cond(A)	$A^{-1} \ge 0$	$E_{c,1}$	$O_{c,1}$	$E_1$	$O_1$	$E_{\infty}$	$O_{\infty}$
	20	4.68E+03	×	1.28E-02	_	8.69E-01	_	5.88E+00	_
$\mathbb{P}_1$	40	1.56E+07	×	3.24E-03	1.98	3.45E+02	$\uparrow$	4.60E+03	$\uparrow$
	80	1.75E+14	×	8.16E-04	1.99	4.68E+08	1	1.25E+10	<b>1</b>
	20	5.53E+02	✓	4.92E-04	_	1.16E-03	_	2.08E-03	_
$\mathbb{P}_2$	40	2.15E+03	$\checkmark$	6.40E - 05	2.94	2.80E-04	2.05	5.01E-04	2.05
	80	8.48E+03	✓	8.16E-06	2.97	6.89E-05	2.02	1.23E-04	2.03
	20	6.38E+02	$\checkmark$	2.19E-05	_	1.23E-04		2.32E-04	_
$\mathbb{P}_3$	40	2.47E+03	$\checkmark$	1.39E-06	3.98	1.57E-05	2.96	3.06E-05	2.93
	80	9.72E+03	✓	8.80E-08	3.99	1.99E-06	2.98	3.92E-06	2.96
	20	8.37E+02	✓	1.27E-06	_	4.79E-06	_	9.36E-06	_
$\mathbb{P}_4$	40	3.18E+03	$\checkmark$	4.11E-08	4.94	3.25E-07	3.88	6.54E-07	3.84
	80	1.24E+04	✓	1.31E-09	4.97	2.10E-08	3.95	4.31E-08	3.92
	20	8.96E+02	✓	6.32E-08	<u> </u>	4.13E-07		7.97E-07	
$\mathbb{P}_5$	40	3.39E+03	$\checkmark$	9.99E-10	5.98	1.38E-08	4.90	2.73E-08	4.87
	80	1.32E+04	✓	1.57E-11	5.99	4.49E-10	4.95	8.95E-10	4.93

Table 5: Numerical results of pure diffusion for  $\phi(x) = \exp(x)$ ,  $\kappa(x) = 1$ , and u(x) = 0 (c3; uniform mesh;  $\epsilon = \frac{h}{2}$ ).

	I	cond(A)	$A^{-1} \ge 0$	$E_{c,1}$	$O_{c,1}$	$E_1$	$O_1$	$E_{\infty}$	$O_{\infty}$
	20	6.48E+02	✓	4.25E-03	_	3.37E-02	_	6.61E-02	_
$\mathbb{P}_1$	40	2.59E+03	$\checkmark$	1.06E-03	2.00	1.69E-02	0.99	3.35E-02	0.98
	80	1.04E+04	$\checkmark$	2.65E-04	2.00	8.48E-03	1.00	1.69E-02	0.99
	20	8.75E+02	✓	1.27E-04		1.31E-03	_	2.50E-03	_
$\mathbb{P}_2$	40	3.40E+03	$\checkmark$	1.52E-05	3.07	3.05E-04	2.11	5.88E-04	2.09
	80	1.34E+04	✓	1.85E-06	3.04	7.33E-05	2.06	1.42E-04	2.05
	20	1.12E+03	$\checkmark$	6.86E-06	_	7.97E-05	_	1.54E-04	_
$\mathbb{P}_3$	40	4.29E+03	$\checkmark$	3.63E-07	4.24	7.46E-06	3.42	1.46E-05	3.39
	80	1.67E+04	$\checkmark$	2.06E-08	4.14	7.69E-07	3.28	1.52E-06	3.27
	20	1.48E+03	×	4.15E-07	_	5.95E-06	_	1.16E-05	_
$\mathbb{P}_4$	40	5.40E+03	×	9.36E-09	5.47	2.02E-07	4.88	3.99E-07	4.86
	80	1.93E+04	$\checkmark$	2.96E-08	<b>↑</b>	1.96E-06	$\uparrow$	3.90E-06	<b>1</b>
	20	2.39E+03	×	3.04E-08	_	5.87E-07	_	1.14E-06	_
$\mathbb{P}_5$	40	5.75E+03	$\checkmark$	1.77E-08	0.79	7.10E-07	$\uparrow$	1.40E-06	$\uparrow$
	80	2.23E+04	$\checkmark$	3.77E-10	5.55	3.04E-08	4.54	6.04E-08	4.54

Table 6: Numerical results of pure diffusion for  $\phi(x) = \exp(x)$ ,  $\kappa(x) = 1$ , and u(x) = 0 (c4; uniform mesh;  $\epsilon = \frac{h}{2}$ ).

	I	cond(A)	$A^{-1} \ge 0$	$E_{c,1}$	$O_{c,1}$	$E_1$	$O_1$	$E_{\infty}$	$O_{\infty}$
	20	4.66E+03	×	9.50E-03	_	9.81E-01	_	4.93E+00	_
$\mathbb{P}_1$	40	1.95E+07	×	2.41E-03	1.98	8.65E+02	$\uparrow$	4.50E+03	$\uparrow$
	80	4.34E+14	×	6.06E-04	1.99	4.06E+09	1	1.62E+10	<b>1</b>
	20	5.60E+02	✓	3.52E-04	_	6.37E-04	_	1.48E-03	_
$\mathbb{P}_2$	40	2.16E+03	$\checkmark$	4.57E - 05	2.95	1.88E-04	1.76	4.31E-04	1.77
	80	8.51E+03	$\checkmark$	5.82E-06	2.97	5.07E-05	1.89	1.16E-04	1.89
	20	6.56E+02	✓	1.53E-05	_	2.74E-05	_	6.02E-05	_
$\mathbb{P}_3$	40	2.51E+03	$\checkmark$	9.80E-07	3.97	4.19E-06	2.71	8.77E-06	2.78
	80	9.80E+03	✓	6.21E-08	3.98	5.77E-07	2.86	1.18E-06	2.90
	20	8.76E+02	$\checkmark$	1.16E-06		2.55E-06		4.95E-06	
$\mathbb{P}_4$	40	3.26E+03	$\checkmark$	3.83E-08	4.92	1.76E-07	3.86	3.34E-07	3.89
	80	1.25E+04	$\checkmark$	1.24E-09	4.95	1.17E-08	3.91	2.19E-08	3.93
	20	9.97E+02	✓	5.51E-08		2.15E-07	_	4.29E-07	
$\mathbb{P}_5$	40	3.61E+03	$\checkmark$	8.80E-10	5.97	7.80E-09	4.79	1.54E-08	4.80
	80	1.36E+04	✓	1.40E-11	5.98	2.62E-10	4.90	5.16E-10	4.90

Table 7: Numerical results of pure diffusion for  $\phi(x) = \exp(x)$ ,  $\kappa(x) = 1$ , and u(x) = 0 (c1; uniform mesh;  $\epsilon = \frac{h^2}{2}$ ).

	I	cond(A)	$A^{-1} \ge 0$	$E_{c,1}$	O <sub>c,1</sub>	$E_1$	O <sub>1</sub>	$E_{\infty}$	$O_{\infty}$
	20	6.48E+02	<b>√</b>	9.92E-04	_	1.19E-03		2.55E-03	_
$\mathbb{P}_1$	40	2.59E+03	$\checkmark$	2.28E-04	2.12	2.97E-04	2.00	6.47E-04	1.98
	80	1.04E+04	$\checkmark$	5.46E-05	2.06	7.42E-05	2.00	1.63E-04	1.99
	20	8.27E+02	✓	7.05E-05	_	9.70E-05	_	2.50E-04	_
$\mathbb{P}_2$	40	3.30E+03	$\checkmark$	9.24E-06	2.93	3.08E-05	1.65	7.59E-05	1.72
	80	1.32E+04	✓	1.18E-06	2.97	8.53E-06	1.85	2.07E-05	1.88
	20	1.02E+03	✓	4.25E-06	_	1.41E-06		2.19E-06	_
$\mathbb{P}_3$	40	4.08E+03	$\checkmark$	2.73E-07	3.96	8.88E-08	3.99	1.40E-07	3.97
	80	1.63E+04	✓	1.73E-08	3.98	5.58E-09	3.99	8.85E-09	3.99
	20	1.19E+03	✓	1.95E-07	_	2.28E-08		4.92E-08	_
$\mathbb{P}_4$	40	4.74E+03	$\checkmark$	6.27E-09	4.96	1.92E-09	3.57	5.19E-09	3.25
	80	1.90E+04	✓	1.99E-10	4.98	1.53E-10	3.65	3.93E-10	3.72
	20	1.36E+03	✓	8.57E-09	_	1.07E-09	_	4.89E-09	_
$\mathbb{P}_5$	40	5.42E+03	$\checkmark$	1.38E-10	5.96	1.84E-11	5.87	8.80E-11	5.80
	80	2.17E+04	$\checkmark$	2.23E-12	5.95	3.37E-13	5.77	1.55E-12	5.82

Table 8: Numerical results of pure diffusion for  $\phi(x) = \exp(x)$ ,  $\kappa(x) = 1$ , and u(x) = 0 (c2; uniform mesh;  $\epsilon = \frac{h^2}{2}$ ).

	I	cond(A)	$A^{-1} \ge 0$	$E_{c,1}$	O <sub>c,1</sub>	E <sub>1</sub>	O <sub>1</sub>	$E_{\infty}$	$O_{\infty}$
	20	4.68E+03	×	9.52E-03	_	8.66E-01	_	5.82E+00	_
$\mathbb{P}_1$	40	1.56E+07	×	2.41E-03	1.98	3.45E+02	$\uparrow$	4.60E+03	$\uparrow$
	80	1.72E+14	×	6.06E-04	1.99	4.68E+08	$\uparrow$	1.25E+10	<u> </u>
	20	5.25E+02	<b>✓</b>	3.51E-04	_	4.89E-04	_	1.20E-03	_
$\mathbb{P}_2$	40	2.09E+03	$\checkmark$	4.56E-05	2.94	1.41E-04	1.79	3.41E-04	1.81
	80	8.36E+03	✓	5.81E-06	2.97	3.77E-05	1.91	9.04E-05	1.91
	20	5.99E+02	$\checkmark$	1.52E-05	_	6.12E-06	_	1.12E-05	_
$\mathbb{P}_3$	40	2.39E+03	$\checkmark$	9.77E - 07	3.96	4.35E-07	3.82	8.10E-07	3.79
	80	9.56E+03	✓	6.20E-08	3.98	3.14E-08	3.79	6.03E-08	3.75
	20	7.52E+02	<b>√</b>	1.16E-06		8.60E-07		2.02E-06	
$\mathbb{P}_4$	40	3.00E+03	$\checkmark$	3.84E-08	4.92	6.80E-08	3.66	1.59E-07	3.66
	80	1.20E+04	✓	1.24E-09	4.96	4.65E-09	3.87	1.10E-08	3.86
	20	7.99E+02	✓	5.47E-08	_	2.72E-08	_	5.72E-08	
$\mathbb{P}_5$	40	3.19E+03	$\checkmark$	8.76E-10	5.96	7.88E-10	5.11	1.77E-09	5.01
	80	1.27E+04	✓	1.39E-11	5.98	2.34E-11	5.07	5.44E-11	5.03

Table 9: Numerical results of pure diffusion for  $\phi(x) = \exp(x)$ ,  $\kappa(x) = 1$ , and u(x) = 0 (c3; uniform mesh;  $\epsilon = \frac{h^2}{2}$ ).

	I	cond(A)	$A^{-1} \ge 0$	$E_{c,1}$	O <sub>c,1</sub>	$E_1$	$O_1$	$E_{\infty}$	$O_{\infty}$
	20	6.48E+02	<b>√</b>	9.91E-04	_	1.18E-03	_	2.53E-03	_
$\mathbb{P}_1$	40	2.59E+03	$\checkmark$	2.28E-04	2.12	2.97E-04	1.99	6.47E-04	1.97
	80	1.04E+04	$\checkmark$	5.46E-05	2.06	7.42E-05	2.00	1.63E-04	1.99
	20	8.27E+02	<b>√</b>	6.93E-05		8.47E-05	_	2.25E-04	_
$\mathbb{P}_2$	40	3.30E+03	$\checkmark$	9.20E-06	2.91	3.00E-05	1.50	7.43E-05	1.60
	80	1.32E+04	✓	1.18E-06	2.96	8.48E-06	1.82	2.06E-05	1.85
	20	1.02E+03	$\checkmark$	4.10E-06	_	2.97E-06	_	5.06E-06	_
$\mathbb{P}_3$	40	4.08E+03	$\checkmark$	2.71E-07	3.92	1.36E-07	4.45	2.29E-07	4.47
	80	1.63E+04	✓	1.73E-08	3.97	7.02E-09	4.28	1.16E-08	4.30
	20	1.19E+03	<b>✓</b>	1.80E-07		1.58E-07	_	3.39E-07	_
$\mathbb{P}_4$	40	4.74E+03	$\checkmark$	6.16E-09	4.87	3.94E-09	5.33	9.44E-09	5.17
	80	1.90E+04	✓	5.00E-10	3.62	1.69E-08	<b>↑</b>	3.36E-08	<u> </u>
	20	1.36E+03	✓	7.13E-09	_	1.52E-08	_	2.71E-08	
$\mathbb{P}_5$	40	5.42E+03	$\checkmark$	6.01E-10	3.57	1.10E-08	0.47	2.16E-08	0.33
	80	2.17E+04	$\checkmark$	6.52E-12	6.53	2.23E-10	5.62	4.43E-10	5.61

Table 10: Numerical results of pure diffusion for  $\phi(x) = \exp(x)$ ,  $\kappa(x) = 1$ , and u(x) = 0 (c4; uniform mesh;  $\epsilon = \frac{h^2}{2}$ ).

	I	cond(A)	$A^{-1} \ge 0$	$E_{c,1}$	$O_{c,1}$	$E_1$	$O_1$	$E_{\infty}$	$O_{\infty}$
	20	4.66E+03	×	9.36E-03	_	8.64E-01	_	5.74E+00	_
$\mathbb{P}_1$	40	1.55E+07	×	2.39E-03	1.97	3.58E+02	$\uparrow$	4.54E+03	$\uparrow$
	80	1.70E+14	×	6.03E-04	1.98	5.26E+08	1	1.23E+10	<b>↑</b>
	20	5.25E+02	✓	3.44E-04		5.59E-04	_	1.33E-03	_
$\mathbb{P}_2$	40	2.09E+03	$\checkmark$	4.51E-05	2.93	1.50E-04	1.89	3.58E-04	1.89
	80	8.36E+03	$\checkmark$	5.78E-06	2.96	3.89E-05	1.95	9.28E-05	1.95
	20	5.99E+02	<b>✓</b>	1.57E-05	_	1.78E-06	_	5.84E-06	_
$\mathbb{P}_3$	40	2.39E+03	$\checkmark$	9.93E-07	3.98	1.07E-07	4.06	3.58E-07	4.03
	80	9.56E+03	$\checkmark$	6.25E-08	3.99	8.90E-09	3.58	1.60E-08	4.49
	20	7.52E+02	<b>√</b>	1.18E-06	_	6.57E-07	_	1.61E-06	_
$\mathbb{P}_4$	40	3.00E+03	$\checkmark$	3.88E-08	4.93	6.04E-08	3.44	1.45E-07	3.48
	80	1.20E+04	✓	1.24E-09	4.96	4.40E-09	3.78	1.05E-08	3.79
	20	7.99E+02	✓	5.62E-08	_	8.48E-09	_	2.40E-08	_
$\mathbb{P}_5$	40	3.19E+03	$\checkmark$	8.90E-10	5.98	4.67E-10	4.18	1.17E-09	4.36
	80	1.27E+04	$\checkmark$	1.40E-11	5.99	1.82E-11	4.68	4.43E-11	4.72

## 2 Biharmonic

- manufactured solutions
- $01\_01 \psi_L = \psi_{LL} = 1$  and  $\psi_R = \psi_{RR} = \exp(1)$ ;  $\psi(x) = \exp(x)$ ;
- $02\_02 \psi_L = 1$ ,  $M_L = -1$ ,  $\psi_R = \exp(1)$ , and  $M_R = -\exp(1)$ ;  $\psi(x) = \exp(x)$
- 01\_23  $\psi_L$ = $\psi_{LL}$ =1,  $M_R$ = $G_R$ =-exp(1);  $\psi(x)$  = exp(x);

Table 11: Test of 01\_01 with d and d+1.

			ω =	: 1 1		$\omega = 1 3$				
	I	E <sub>0,1</sub>	$O_{0,1}$	$E_{0,\infty}$	$O_{0,\infty}$	$E_{0,1}$	$O_{0,1}$	$E_{0,\infty}$	$O_{0,\infty}$	
	50	1.50E-05		2.37E-05		3.71E-07	_	7.30E-07	_	
TD	100	1.90E-06	2.98	2.98E-06	2.99	1.12E-07	1.72	2.12E-07	1.78	
$\mathbb{P}_3$	150	5.55E-07	3.03	8.69E-07	3.04	4.90E-08	2.04	9.32E-08	2.03	
	200	2.30E-07	3.07	3.58E-07	3.08	2.85E-08	1.88	5.38E-08	1.91	
	50	1.63E-05		2.56E-05		2.26E-07	_	5.00E-07		
TD /TD	100	1.97E-06	3.05	3.09E-06	3.05	7.36E-08	1.62	1.52E-07	1.72	
$\mathbb{P}_3/\mathbb{P}_4$	150	5.70E-07	3.07	8.89E-07	3.07	7.02E-08	0.12	1.27E-07	0.44	
	200	2.34E-07	3.09	3.64E-07	3.10	3.29E-08	2.63	6.04E-08	2.58	

Table 12: Test of  $02\_02$  with d and d+1.

			ω =	: 1 1		$\omega = 1 3$				
	I	E <sub>0,1</sub>	O <sub>0,1</sub>	$E_{0,\infty}$	$O_{0,\infty}$	E <sub>0,1</sub>	O <sub>0,1</sub>	$E_{0,\infty}$	$O_{0,\infty}$	
	50	1.94E-04		2.92E-04		8.90E-08		2.21E-07	_	
TD.	100	4.91E-05	1.98	7.41E-05	1.98	3.43E-06	$\uparrow$	5.22E-06	$\uparrow$	
$\mathbb{P}_3$	150	2.19E-05	1.99	3.31E-05	1.99	1.06E-06	2.90	1.66E-06	2.83	
	200	1.24E-05	1.99	1.86E-05	1.99	4.94E-07	2.65	7.58E-07	2.71	
	50	2.00E-04	_	3.01E-04		5.73E-06	_	9.08E-06	_	
TD /TD	100	5.05E-05	1.98	7.63E-05	1.98	6.05E-06	$\uparrow$	9.19E-06	$\uparrow$	
$\mathbb{P}_3/\mathbb{P}_5$	150	2.24E-05	2.01	3.38E-05	2.01	2.11E-06	2.60	3.28E-06	2.54	
	200	1.26E-05	2.01	1.90E-05	2.01	1.71E-06	0.73	2.63E-06	0.76	

Table 13: Test of 01\_23 with d and d+1.

		$\omega = 1 1$				$\omega = 1 3$				
	I	E <sub>0,1</sub>	$O_{0,1}$	$E_{0,\infty}$	$O_{0,\infty}$	E <sub>0,1</sub>	$O_{0,1}$	$E_{0,\infty}$	$O_{0,\infty}$	
$\mathbb{P}_3$	50	9.02E-01		2.65E+00		7.17E-01	_	2.11E+00		
	100	8.98E-01	0.01	2.67E+00	$\uparrow$	5.70E-01	0.33	1.69E+00	0.31	
	150	8.97E-01	0.00	2.67E+00	$\uparrow$	6.73E-01	$\uparrow$	2.01E+00	$\uparrow$	
	200	8.97E-01	0.00	2.68E+00	$\uparrow$	6.15E-01	0.32	1.83E+00	0.31	
$\mathbb{P}_3/\mathbb{P}_6$	50	1.15E+02	_	3.38E+02	_	7.93E-01	_	2.33E+00	_	
	100	9.04E-01	6.99	2.69E+00	6.97	5.93E-01	0.42	1.76E+00	0.41	
	150	6.22E+00	$\uparrow$	1.85E+01	$\uparrow$	9.13E-01	$\uparrow$	2.72E+00	$\uparrow$	
	200	1.18E+01	$\uparrow$	3.52E+01	$\uparrow$	1.26E+01	<b>↑</b>	3.76E+01	<u></u>	

Table 14: Test of 01\_01 with d and d+1 (homogenuous bc's)

		$\omega = 1 1$					$\omega = 1 3$				
	I	E <sub>0,1</sub>	O <sub>0,1</sub>	$E_{0,\infty}$	$O_{0,\infty}$		E <sub>0,1</sub>	O <sub>0,1</sub>	$E_{0,\infty}$	$O_{0,\infty}$	
$\mathbb{P}_3$	50	1.50E-05	_	2.37E-05		1.6	3E-05	_	2.56E-05		
	100	1.90E-06	2.98	2.98E-06	2.99	1.9	97E-06	3.05	3.09E-06	3.05	
	150	5.55E-07	3.03	8.69E-07	3.04	5.7	70E-07	3.07	8.89E-07	3.07	
	200	2.30E-07	3.07	3.58E-07	3.08	2.3	34E-07	3.09	3.64E-07	3.10	
$\mathbb{P}_3/\mathbb{P}_4$	50	2.14E-09		3.63E-09		1.9	92E-09		2.89E-09		
	100	7.89E-11	4.76	1.19E-10	4.93	5.8	88E-11	5.03	9.28E-11	4.96	
	150	1.33E-11	4.38	2.05E-11	4.35	7.8	33E-12	4.98	1.25E-11	4.95	
	200	5.71E-12	2.95	8.68E-12	2.98	3.5	66E-12	2.74	5.79E-12	2.67	
$\mathbb{P}_5$	50	1.51E-05	_	2.38E-05	_	1.6	64E-05	_	2.57E-05	_	
	100	1.90E-06	2.99	2.99E-06	2.99	1.9	98E-06	3.05	3.09E-06	3.05	
	150	5.56E-07	3.04	8.70E-07	3.04	5.7	71E-07	3.07	8.90E-07	3.07	
	200	2.30E-07	3.07	3.58E-07	3.08	2.3	34E-07	3.09	3.65E-07	3.10	
$\mathbb{P}_5/\mathbb{P}_6$	50	2.16E-09	_	3.64E-09	_	1.9	92E-09		2.90E-09		
	100	7.86E-11	4.78	1.19E-10	4.94	5.8	37E-11	5.03	9.25E-11	4.97	
	150	1.40E-11	4.25	2.18E-11	4.19	6.1	7E-12	5.56	9.60E-12	5.59	
	200	4.09E-12	4.29	5.80E-12	4.60	1.8	37E-12	4.15	2.70E-12	4.41	