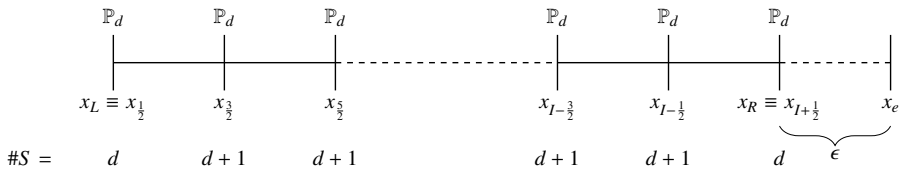
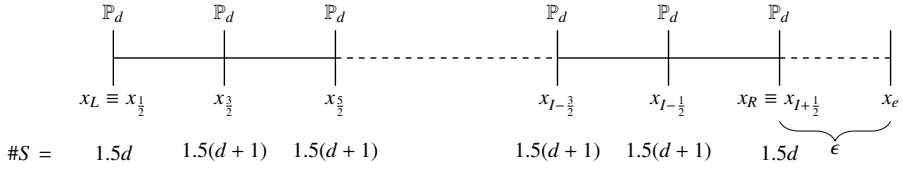
In this tests are considered 6 types of combinations:

- $c1$

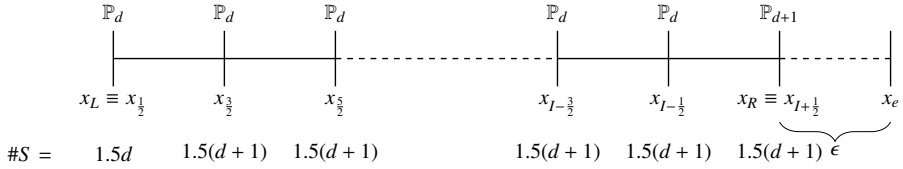


- $c2$



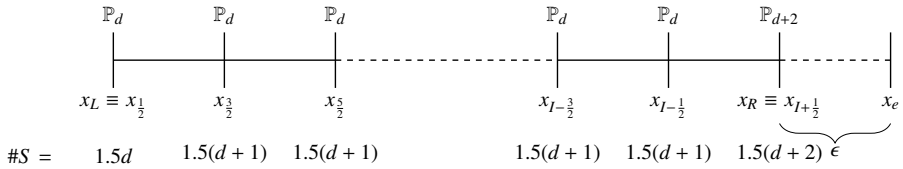
- $c3$

- $c4$



- $c5$

- $c6$



$\epsilon = h/2$ – **uniform mesh**

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

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	6.48E+02	×	4.26E−03	—	3.38E−02	—	6.63E−02	—
$\mathbb{P}_1$	40	2.59E+03	×	1.06E−03	2.01	1.70E−02	1.00	3.36E−02	0.98
	80	1.04E+04	×	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	×	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	×	4.73E−06	—	3.86E−05	—	7.34E−05	—
$\mathbb{P}_3$	40	4.29E+03	×	2.95E−07	4.00	4.82E−06	3.00	9.40E−06	2.96
	80	1.67E+04	×	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	3.50E−11	4.98	7.05E−11	5.00

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

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	3.67E+02	×	7.51E−03	—	3.96E−02	—	8.19E−02	—
$\mathbb{P}_1$	40	1.47E+03	×	1.90E−03	1.98	2.03E−02	0.96	4.21E−02	0.96
	80	5.91E+03	×	4.78E−04	1.99	1.03E−02	0.98	2.13E−02	0.98
	20	5.58E+02	×	4.62E−04	—	1.19E−03	—	2.15E−03	—
$\mathbb{P}_2$	40	2.17E+03	×	6.00E−05	2.95	2.90E−04	2.04	5.21E−04	2.04
	80	8.56E+03	×	7.64E−06	2.97	7.14E−05	2.02	1.28E−04	2.02
	20	6.38E+02	×	2.12E−05	—	1.23E−04	—	2.34E−04	—
$\mathbb{P}_3$	40	2.47E+03	×	1.35E−06	3.98	1.58E−05	2.96	3.08E−05	2.93
	80	9.73E+03	×	8.49E−08	3.99	2.00E−06	2.98	3.95E−06	2.96
	20	8.35E+02	×	1.24E−06	—	4.86E−06	—	9.50E−06	—
$\mathbb{P}_4$	40	3.17E+03	×	4.02E−08	4.94	3.29E−07	3.88	6.63E−07	3.84
	80	1.24E+04	×	1.28E−09	4.97	2.13E−08	3.95	4.36E−08	3.93
	20	8.96E+02	×	6.31E−08	—	4.14E−07	—	7.98E−07	—
$\mathbb{P}_5$	40	3.39E+03	×	9.97E−10	5.98	1.39E−08	4.90	2.73E−08	4.87
	80	1.32E+04	×	1.57E−11	5.99	4.47E−10	4.95	8.93E−10	4.94

Table 3: Numerical results of pure diffusion for $\phi(x) = \exp(x)$, $\kappa(x) = 1$, and $u(x) = 0$ (c3; uniform mesh).

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	6.87E+02	×	9.15E−04	—	7.72E−04	—	1.70E−03	—
$\mathbb{P}_1$	40	2.67E+03	×	2.19E−04	2.07	1.94E−04	1.99	4.35E−04	1.97
	80	1.05E+04	×	5.34E−05	2.03	4.87E−05	2.00	1.10E−04	1.99
	20	9.08E+02	×	7.24E−05	—	3.45E−04	—	7.34E−04	—
$\mathbb{P}_2$	40	3.47E+03	×	9.36E−06	2.95	9.55E−05	1.85	2.04E−04	1.85
	80	1.35E+04	×	1.19E−06	2.98	2.50E−05	1.93	5.35E−05	1.93
	20	1.24E+03	×	4.31E−06	—	3.26E−05	—	6.54E−05	—
$\mathbb{P}_3$	40	4.55E+03	×	2.75E−07	3.97	4.43E−06	2.88	8.87E−06	2.88
	80	1.73E+04	×	1.74E−08	3.98	5.77E−07	2.94	1.15E−06	2.94
	20	1.89E+03	×	1.96E−07	—	2.60E−06	—	5.08E−06	—
$\mathbb{P}_4$	40	6.31E+03	×	6.30E−09	4.96	1.73E−07	3.91	3.41E−07	3.90
	80	2.23E+04	×	2.00E−10	4.98	1.11E−08	3.95	2.21E−08	3.95
	20	3.62E+03	×	8.64E−09	—	1.83E−07	—	3.62E−07	—
$\mathbb{P}_5$	40	1.10E+04	×	1.38E−10	5.96	6.22E−09	4.88	1.24E−08	4.87
	80	3.48E+04	×	2.24E−12	5.95	2.01E−10	4.95	4.01E−10	4.95

Table 4: Numerical results of pure diffusion for $\phi(x) = \exp(x)$, $\kappa(x) = 1$, and $u(x) = 0$ (c4; uniform mesh).

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	3.85E+02	×	4.22E−03	—	1.13E−02	—	2.65E−02	—
$\mathbb{P}_1$	40	1.51E+03	×	1.06E−03	1.99	5.87E−03	0.95	1.35E−02	0.97
	80	5.99E+03	×	2.67E−04	1.99	2.99E−03	0.97	6.81E−03	0.99
	20	5.65E+02	×	3.22E−04	—	6.26E−04	—	1.43E−03	—
$\mathbb{P}_2$	40	2.18E+03	×	4.17E−05	2.95	1.85E−04	1.76	4.21E−04	1.77
	80	8.59E+03	×	5.30E−06	2.97	4.98E−05	1.89	1.13E−04	1.89
	20	6.57E+02	×	1.46E−05	—	2.58E−05	—	5.68E−05	—
$\mathbb{P}_3$	40	2.51E+03	×	9.34E−07	3.97	3.97E−06	2.70	8.31E−06	2.77
	80	9.81E+03	×	5.92E−08	3.98	5.47E−07	2.86	1.12E−06	2.89
	20	8.72E+02	×	1.13E−06	—	2.45E−06	—	4.75E−06	—
$\mathbb{P}_4$	40	3.25E+03	×	3.74E−08	4.92	1.69E−07	3.85	3.22E−07	3.88
	80	1.25E+04	×	1.20E−09	4.95	1.13E−08	3.91	2.11E−08	3.93
	20	9.96E+02	×	5.49E−08	—	2.15E−07	—	4.28E−07	—
$\mathbb{P}_5$	40	3.61E+03	×	8.77E−10	5.97	7.78E−09	4.79	1.54E−08	4.80
	80	1.36E+04	×	1.39E−11	5.98	2.62E−10	4.89	5.18E−10	4.89

Table 5: Numerical results of pure diffusion for $\phi(x) = \exp(x)$, $\kappa(x) = 1$, and $u(x) = 0$ (c5; uniform mesh).

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	5.29E+02	×	3.50E−03	—	1.87E−02	—	4.08E−02	—
$\mathbb{P}_1$	40	2.02E+03	×	9.04E−04	1.95	1.01E−02	0.89	2.17E−02	0.91
	80	7.90E+03	×	2.30E−04	1.97	5.22E−03	0.95	1.12E−02	0.96
	20	1.13E+03	×	2.90E−04	—	3.49E−03	—	6.63E−03	—
$\mathbb{P}_2$	40	3.83E+03	×	3.83E−05	2.92	9.14E−04	1.93	1.76E−03	1.92
	80	1.38E+04	×	4.92E−06	2.96	2.34E−04	1.96	4.52E−04	1.96
	20	1.94E+03	×	1.24E−05	—	1.84E−04	—	3.51E−04	—
$\mathbb{P}_3$	40	6.17E+03	×	7.91E−07	3.97	2.47E−05	2.89	4.83E−05	2.86
	80	2.08E+04	×	5.01E−08	3.98	3.21E−06	2.95	6.34E−06	2.93
	20	3.64E+03	×	1.05E−06	—	9.23E−06	—	1.80E−05	—
$\mathbb{P}_4$	40	1.08E+04	×	3.47E−08	4.92	6.54E−07	3.82	1.30E−06	3.79
	80	3.36E+04	×	1.12E−09	4.96	4.34E−08	3.91	8.75E−08	3.90
	20	6.96E+03	×	4.66E−08	—	5.64E−08	—	1.06E−07	—
$\mathbb{P}_5$	40	2.02E+04	×	7.50E−10	5.96	2.30E−09	4.61	4.58E−09	4.53
	80	5.96E+04	×	1.20E−11	5.97	9.46E−11	4.61	1.92E−10	4.57

Table 6: Numerical results of pure diffusion for $\phi(x) = \exp(x)$, $\kappa(x) = 1$, and $u(x) = 0$ (c6; uniform mesh).

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	3.88E+02	×	4.08E−03	—	1.23E−02	—	2.83E−02	—
$\mathbb{P}_1$	40	1.52E+03	×	1.05E−03	1.96	6.81E−03	0.85	1.54E−02	0.88
	80	6.00E+03	×	2.65E−04	1.98	3.59E−03	0.92	7.99E−03	0.94
	20	5.85E+02	×	3.13E−04	—	4.38E−04	—	1.08E−03	—
$\mathbb{P}_2$	40	2.23E+03	×	4.11E−05	2.93	1.15E−04	1.93	2.85E−04	1.92
	80	8.67E+03	×	5.27E−06	2.96	2.92E−05	1.97	7.29E−05	1.97
	20	6.74E+02	×	1.50E−05	—	3.88E−05	—	8.21E−05	—
$\mathbb{P}_3$	40	2.55E+03	×	9.47E−07	3.98	5.26E−06	2.88	1.09E−05	2.92
	80	9.89E+03	×	5.96E−08	3.99	6.84E−07	2.94	1.39E−06	2.96
	20	9.88E+02	×	1.16E−06	—	2.65E−06	—	5.15E−06	—
$\mathbb{P}_4$	40	3.51E+03	×	3.78E−08	4.93	1.62E−07	4.03	3.08E−07	4.06
	80	1.31E+04	×	1.21E−09	4.96	1.01E−08	4.00	1.88E−08	4.03
	20	1.07E+03	×	5.60E−08	—	2.83E−07	—	5.61E−07	—
$\mathbb{P}_5$	40	3.77E+03	×	8.87E−10	5.98	9.72E−09	4.86	1.92E−08	4.87
	80	1.40E+04	×	1.40E−11	5.99	3.23E−10	4.91	6.39E−10	4.91

$\epsilon = h^2$ – uniform mesh

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

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	6.48E+02	×	1.16E−03	—	2.86E−03	—	5.87E−03	—
$\mathbb{P}_1$	40	2.59E+03	×	2.49E−04	2.22	7.15E−04	2.00	1.49E−03	1.98
	80	1.04E+04	×	5.72E−05	2.12	1.79E−04	2.00	3.74E−04	1.99
	20	8.29E+02	×	6.57E−05	—	5.36E−05	—	1.62E−04	—
$\mathbb{P}_2$	40	3.30E+03	×	8.94E−06	2.88	2.54E−05	1.08	6.51E−05	1.32
	80	1.32E+04	×	1.16E−06	2.94	7.85E−06	1.69	1.93E−05	1.75
	20	1.02E+03	×	4.10E−06	—	2.34E−06	—	3.90E−06	—
$\mathbb{P}_3$	40	4.08E+03	×	2.68E−07	3.93	1.43E−07	4.04	2.41E−07	4.02
	80	1.63E+04	×	1.72E−08	3.97	8.81E−09	4.02	1.51E−08	4.00
	20	1.19E+03	×	1.89E−07	—	2.26E−08	—	4.74E−08	—
$\mathbb{P}_4$	40	4.74E+03	×	6.18E−09	4.94	1.80E−09	3.65	4.92E−09	3.27
	80	1.90E+04	×	1.98E−10	4.97	1.47E−10	3.62	3.82E−10	3.69
	20	1.37E+03	×	8.38E−09	—	2.61E−09	—	8.76E−09	—
$\mathbb{P}_5$	40	5.43E+03	×	1.36E−10	5.94	4.68E−11	5.80	1.55E−10	5.82
	80	2.17E+04	×	2.21E−12	5.95	1.02E−12	5.52	2.95E−12	5.72

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

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	3.67E+02	×	4.41E−03	—	8.78E−03	—	2.14E−02	—
$\mathbb{P}_1$	40	1.47E+03	×	1.09E−03	2.02	4.10E−03	1.10	9.98E−03	1.10
	80	5.91E+03	×	2.70E−04	2.01	1.99E−03	1.05	4.80E−03	1.06
	20	5.31E+02	×	3.28E−04	—	3.98E−04	—	1.01E−03	—
$\mathbb{P}_2$	40	2.11E+03	×	4.21E−05	2.96	1.26E−04	1.66	3.07E−04	1.71
	80	8.44E+03	×	5.33E−06	2.98	3.48E−05	1.85	8.40E−05	1.87
	20	6.01E+02	×	1.40E−05	—	1.01E−05	—	1.80E−05	—
$\mathbb{P}_3$	40	2.40E+03	×	9.15E−07	3.94	6.54E−07	3.95	1.20E−06	3.90
	80	9.57E+03	×	5.85E−08	3.97	4.17E−08	3.97	7.78E−08	3.95
	20	7.54E+02	×	1.11E−06	—	9.46E−07	—	2.17E−06	—
$\mathbb{P}_4$	40	3.00E+03	×	3.71E−08	4.91	6.95E−08	3.77	1.61E−07	3.75
	80	1.20E+04	×	1.20E−09	4.95	4.62E−09	3.91	1.09E−08	3.89
	20	8.01E+02	×	5.29E−08	—	3.87E−08	—	7.74E−08	—
$\mathbb{P}_5$	40	3.19E+03	×	8.60E−10	5.94	9.67E−10	5.32	2.11E−09	5.20
	80	1.28E+04	×	1.38E−11	5.96	2.61E−11	5.21	5.94E−11	5.15

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

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	6.51E+02	×	8.66E−04	—	4.78E−04	—	5.89E−04	—
$\mathbb{P}_1$	40	2.60E+03	×	2.13E−04	2.02	1.31E−04	1.87	1.71E−04	1.79
	80	1.04E+04	×	5.28E−05	2.02	3.41E−05	1.94	4.55E−05	1.91
	20	8.29E+02	×	7.50E−05	—	1.59E−04	—	3.71E−04	—
$\mathbb{P}_2$	40	3.30E+03	×	9.54E−06	2.98	3.88E−05	2.03	9.17E−05	2.02
	80	1.32E+04	×	1.20E−06	2.99	9.54E−06	2.02	2.27E−05	2.02
	20	1.03E+03	×	4.40E−06	—	1.89E−06	—	5.52E−06	—
$\mathbb{P}_3$	40	4.08E+03	×	2.78E−07	3.98	1.24E−07	3.93	3.68E−07	3.91
	80	1.63E+04	×	1.75E−08	3.99	7.95E−09	3.97	2.37E−08	3.96
	20	1.19E+03	×	2.00E−07	—	1.65E−07	—	3.38E−07	—
$\mathbb{P}_4$	40	4.74E+03	×	6.36E−09	4.97	3.71E−09	5.48	7.45E−09	5.51
	80	1.90E+04	×	2.01E−10	4.99	3.61E−11	6.68	6.50E−11	6.84
	20	1.37E+03	×	8.76E−09	—	9.15E−09	—	2.21E−08	—
$\mathbb{P}_5$	40	5.43E+03	×	1.40E−10	5.97	1.51E−10	5.92	3.69E−10	5.91
	80	2.17E+04	×	2.24E−12	5.96	2.69E−12	5.82	6.33E−12	5.86

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

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	3.69E+02	×	4.08E−03	—	6.08E−03	—	1.59E−02	—
$\mathbb{P}_1$	40	1.48E+03	×	1.05E−03	1.96	3.39E−03	0.84	8.55E−03	0.89
	80	5.92E+03	×	2.65E−04	1.98	1.80E−03	0.91	4.44E−03	0.95
	20	5.31E+02	×	3.14E−04	—	5.42E−04	—	1.28E−03	—
$\mathbb{P}_2$	40	2.11E+03	×	4.11E−05	2.93	1.45E−04	1.90	3.44E−04	1.89
	80	8.44E+03	×	5.27E−06	2.96	3.73E−05	1.96	8.87E−05	1.95
	20	6.01E+02	×	1.50E−05	—	1.60E−06	—	8.67E−06	—
$\mathbb{P}_3$	40	2.40E+03	×	9.46E−07	3.98	1.02E−07	3.97	6.22E−07	3.80
	80	9.57E+03	×	5.96E−08	3.99	6.55E−09	3.97	4.15E−08	3.91
	20	7.54E+02	×	1.15E−06	—	5.32E−07	—	1.34E−06	—
$\mathbb{P}_4$	40	3.00E+03	×	3.78E−08	4.93	5.42E−08	3.30	1.32E−07	3.34
	80	1.20E+04	×	1.21E−09	4.96	4.12E−09	3.72	9.89E−09	3.74
	20	8.02E+02	×	5.60E−08	—	3.59E−09	—	9.43E−09	—
$\mathbb{P}_5$	40	3.19E+03	×	8.87E−10	5.98	3.18E−10	3.50	8.82E−10	3.42
	80	1.28E+04	×	1.40E−11	5.99	1.55E−11	4.36	3.89E−11	4.50

Table 11: Numerical results of pure diffusion for $\phi(x) = \exp(x)$, $\kappa(x) = 1$, and $u(x) = 0$ (c5; uniform mesh).

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	4.79E+02	×	3.49E−03	—	6.89E−03	—	1.74E−02	—
$\mathbb{P}_1$	40	1.92E+03	×	9.04E−04	1.95	3.63E−03	0.92	8.98E−03	0.95
	80	7.69E+03	×	2.30E−04	1.97	1.87E−03	0.96	4.55E−03	0.98
	20	7.61E+02	×	2.90E−04	—	2.70E−04	—	7.56E−04	—
$\mathbb{P}_2$	40	3.02E+03	×	3.83E−05	2.92	1.08E−04	1.32	2.73E−04	1.47
	80	1.21E+04	×	4.92E−06	2.96	3.26E−05	1.73	7.95E−05	1.78
	20	1.01E+03	×	1.24E−05	—	1.19E−05	—	2.07E−05	—
$\mathbb{P}_3$	40	4.02E+03	×	7.91E−07	3.97	7.87E−07	3.92	1.41E−06	3.87
	80	1.61E+04	×	5.01E−08	3.98	5.06E−08	3.96	9.23E−08	3.94
	20	1.24E+03	×	1.05E−06	—	1.11E−06	—	2.48E−06	—
$\mathbb{P}_4$	40	4.89E+03	×	3.47E−08	4.92	7.58E−08	3.87	1.74E−07	3.84
	80	1.95E+04	×	1.12E−09	4.96	4.84E−09	3.97	1.13E−08	3.94
	20	1.48E+03	×	4.66E−08	—	1.37E−08	—	3.13E−08	—
$\mathbb{P}_5$	40	5.80E+03	×	7.50E−10	5.96	5.56E−10	4.62	1.30E−09	4.59
	80	2.31E+04	×	1.19E−11	5.97	1.97E−11	4.82	4.63E−11	4.81

Table 12: Numerical results of pure diffusion for $\phi(x) = \exp(x)$, $\kappa(x) = 1$, and $u(x) = 0$ (c6; uniform mesh).

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	3.69E+02	×	4.07E−03	—	6.14E−03	—	1.60E−02	—
$\mathbb{P}_1$	40	1.48E+03	×	1.05E−03	1.96	3.43E−03	0.84	8.62E−03	0.89
	80	5.92E+03	×	2.65E−04	1.98	1.81E−03	0.92	4.46E−03	0.95
	20	5.31E+02	×	3.13E−04	—	5.31E−04	—	1.26E−03	—
$\mathbb{P}_2$	40	2.11E+03	×	4.11E−05	2.93	1.43E−04	1.90	3.40E−04	1.89
	80	8.44E+03	×	5.27E−06	2.96	3.69E−05	1.95	8.81E−05	1.95
	20	6.01E+02	×	1.50E−05	—	2.24E−06	—	1.03E−05	—
$\mathbb{P}_3$	40	2.40E+03	×	9.47E−07	3.99	1.36E−07	4.04	7.05E−07	3.88
	80	9.57E+03	×	5.96E−08	3.99	8.40E−09	4.02	4.59E−08	3.94
	20	7.55E+02	×	1.16E−06	—	5.15E−07	—	1.30E−06	—
$\mathbb{P}_4$	40	3.00E+03	×	3.78E−08	4.93	5.41E−08	3.25	1.32E−07	3.30
	80	1.20E+04	×	1.21E−09	4.96	4.12E−09	3.71	9.90E−09	3.73
	20	8.02E+02	×	5.61E−08	—	4.65E−09	—	1.66E−08	—
$\mathbb{P}_5$	40	3.19E+03	×	8.87E−10	5.98	2.70E−10	4.10	7.88E−10	4.40
	80	1.28E+04	×	1.40E−11	5.99	1.48E−11	4.19	3.76E−11	4.39

$\epsilon = h/2$ – non-uniform mesh

Table 13: Numerical results of pure diffusion for $\phi(x) = \exp(x)$, $\kappa(x) = 1$, and $u(x) = 0$ (c1; non-uniform mesh).

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	6.54E+02	×	1.45E−02	—	3.38E−02	—	6.58E−02	—
$\mathbb{P}_1$	40	2.63E+03	×	4.38E−03	1.73	1.70E−02	1.00	3.36E−02	0.97
	80	1.06E+04	×	2.59E−03	0.76	8.48E−03	1.00	1.69E−02	0.99
	20	8.21E+02	×	3.43E−04	—	1.08E−03	—	2.02E−03	—
$\mathbb{P}_2$	40	3.52E+03	×	5.54E−05	2.63	3.00E−04	1.84	5.78E−04	1.81
	80	1.38E+04	×	1.62E−05	1.77	6.48E−05	2.21	1.25E−04	2.21
	20	1.06E+03	×	9.52E−06	—	3.72E−05	—	6.98E−05	—
$\mathbb{P}_3$	40	4.42E+03	×	7.57E−07	3.65	5.64E−06	2.72	1.10E−05	2.66
	80	1.72E+04	×	9.53E−08	2.99	5.27E−07	3.42	1.04E−06	3.41
	20	1.48E+03	×	2.99E−07	—	4.66E−07	—	9.22E−07	—
$\mathbb{P}_4$	40	5.44E+03	×	1.18E−08	4.67	6.08E−08	2.94	1.20E−07	2.94
	80	2.09E+04	×	6.51E−10	4.17	2.06E−09	4.88	4.14E−09	4.86
	20	2.67E+03	×	1.05E−08	—	5.27E−08	—	1.08E−07	—
$\mathbb{P}_5$	40	7.85E+03	×	2.00E−10	5.71	1.06E−09	5.64	2.15E−09	5.65
	80	2.84E+04	×	4.39E−12	5.51	3.45E−11	4.94	6.96E−11	4.95

Table 14: Numerical results of pure diffusion for $\phi(x) = \exp(x)$, $\kappa(x) = 1$, and $u(x) = 0$ (c2; non-uniform mesh).

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	3.74E+02	×	1.62E−02	—	3.95E−02	—	8.10E−02	—
$\mathbb{P}_1$	40	1.53E+03	×	5.44E−03	1.58	2.03E−02	0.96	4.22E−02	0.94
	80	6.29E+03	×	2.89E−03	0.91	1.03E−02	0.98	2.13E−02	0.98
	20	5.35E+02	×	5.14E−04	—	1.28E−03	—	2.30E−03	—
$\mathbb{P}_2$	40	2.22E+03	×	1.05E−04	2.29	3.01E−04	2.09	5.47E−04	2.07
	80	8.83E+03	×	2.17E−05	2.28	7.08E−05	2.09	1.27E−04	2.11
	20	6.06E+02	×	3.28E−05	—	1.28E−04	—	2.41E−04	—
$\mathbb{P}_3$	40	2.50E+03	×	2.45E−06	3.74	1.64E−05	2.96	3.21E−05	2.91
	80	9.98E+03	×	2.80E−07	3.13	1.89E−06	3.12	3.72E−06	3.11
	20	8.03E+02	×	1.24E−06	—	4.15E−06	—	8.07E−06	—
$\mathbb{P}_4$	40	3.20E+03	×	4.43E−08	4.81	3.39E−07	3.61	6.83E−07	3.56
	80	1.25E+04	×	1.76E−09	4.65	2.01E−08	4.07	4.12E−08	4.05
	20	8.72E+02	×	8.14E−08	—	3.69E−07	—	7.03E−07	—
$\mathbb{P}_5$	40	3.43E+03	×	1.30E−09	5.97	1.54E−08	4.59	3.04E−08	4.53
	80	1.32E+04	×	3.03E−11	5.42	4.25E−10	5.18	8.47E−10	5.16

Table 15: Numerical results of pure diffusion for $\phi(x) = \exp(x)$, $\kappa(x) = 1$, and $u(x) = 0$ (c3; non-uniform mesh).

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	6.92E+02	×	1.18E−02	—	1.95E−03	—	3.67E−03	—
$\mathbb{P}_1$	40	2.71E+03	×	3.57E−03	1.73	1.22E−03	0.68	2.51E−03	0.55
	80	1.08E+04	×	2.43E−03	0.56	5.20E−04	1.23	1.01E−03	1.31
	20	8.46E+02	×	3.21E−04	—	5.86E−04	—	1.21E−03	—
$\mathbb{P}_2$	40	3.59E+03	×	4.81E−05	2.74	5.67E−05	3.37	1.27E−04	3.25
	80	1.39E+04	×	1.59E−05	1.60	3.78E−05	0.58	7.91E−05	0.69
	20	1.20E+03	×	9.44E−06	—	3.96E−05	—	7.96E−05	—
$\mathbb{P}_3$	40	4.65E+03	×	7.08E−07	3.74	3.90E−06	3.35	7.81E−06	3.35
	80	1.78E+04	×	9.60E−08	2.88	6.13E−07	2.67	1.23E−06	2.67
	20	1.97E+03	×	3.13E−07	—	2.99E−06	—	5.82E−06	—
$\mathbb{P}_4$	40	6.28E+03	×	1.18E−08	4.73	1.56E−07	4.26	3.08E−07	4.24
	80	2.33E+04	×	6.69E−10	4.14	1.18E−08	3.72	2.34E−08	3.72
	20	4.80E+03	×	1.12E−08	—	2.30E−07	—	4.53E−07	—
$\mathbb{P}_5$	40	1.11E+04	×	2.12E−10	5.72	6.61E−09	5.12	1.31E−08	5.11
	80	3.50E+04	×	4.70E−12	5.50	1.86E−10	5.15	3.71E−10	5.14

Table 16: Numerical results of pure diffusion for $\phi(x) = \exp(x)$, $\kappa(x) = 1$, and $u(x) = 0$ (c4; non-uniform mesh).

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	3.92E+02	×	1.25E−02	—	1.15E−02	—	2.64E−02	—
$\mathbb{P}_1$	40	1.57E+03	×	4.63E−03	1.43	5.75E−03	1.00	1.33E−02	0.99
	80	6.36E+03	×	2.67E−03	0.79	3.27E−03	0.81	7.35E−03	0.86
	20	5.38E+02	×	3.51E−04	—	6.64E−04	—	1.49E−03	—
$\mathbb{P}_2$	40	2.23E+03	×	8.66E−05	2.02	2.13E−04	1.64	4.75E−04	1.64
	80	8.87E+03	×	1.93E−05	2.17	3.81E−05	2.48	9.01E−05	2.40
	20	6.21E+02	×	2.78E−05	—	2.98E−05	—	6.53E−05	—
$\mathbb{P}_3$	40	2.55E+03	×	1.97E−06	3.82	3.00E−06	3.31	6.34E−06	3.36
	80	1.01E+04	×	2.60E−07	2.92	7.98E−07	1.91	1.62E−06	1.96
	20	8.50E+02	×	1.29E−06	—	3.44E−06	—	6.68E−06	—
$\mathbb{P}_4$	40	3.28E+03	×	3.88E−08	5.05	1.50E−07	4.52	2.83E−07	4.56
	80	1.27E+04	×	1.77E−09	4.45	1.39E−08	3.43	2.65E−08	3.41
	20	1.01E+03	×	7.82E−08	—	3.02E−07	—	6.02E−07	—
$\mathbb{P}_5$	40	3.66E+03	×	1.12E−09	6.13	6.65E−09	5.51	1.31E−08	5.52
	80	1.38E+04	×	2.93E−11	5.26	2.95E−10	4.50	5.83E−10	4.49

Table 17: Numerical results of pure diffusion for $\phi(x) = \exp(x)$, $\kappa(x) = 1$, and $u(x) = 0$ (c5; non-uniform mesh).

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	4.98E+02	×	1.18E−02	—	3.70E−03	—	1.02E−02	—
$\mathbb{P}_1$	40	2.06E+03	×	4.46E−03	1.40	1.67E−02	↑	3.49E−02	↑
	80	8.13E+03	×	2.64E−03	0.76	1.10E−03	3.92	3.01E−03	3.54
	20	1.06E+03	×	3.16E−04	—	1.98E−03	—	3.66E−03	—
$\mathbb{P}_2$	40	3.86E+03	×	8.40E−05	1.91	1.03E−03	0.94	1.99E−03	0.88
	80	1.38E+04	×	1.89E−05	2.15	1.40E−04	2.89	2.64E−04	2.92
	20	1.91E+03	×	2.52E−05	—	1.31E−04	—	2.47E−04	—
$\mathbb{P}_3$	40	6.11E+03	×	1.83E−06	3.79	2.75E−05	2.26	5.39E−05	2.20
	80	2.15E+04	×	2.52E−07	2.86	2.74E−06	3.33	5.40E−06	3.32
	20	3.78E+03	×	1.20E−06	—	5.10E−06	—	9.92E−06	—
$\mathbb{P}_4$	40	1.13E+04	×	3.63E−08	5.04	7.50E−07	2.76	1.50E−06	2.73
	80	3.41E+04	×	1.69E−09	4.42	3.59E−08	4.39	7.25E−08	4.37
	20	8.69E+03	×	6.82E−08	—	1.52E−07	—	3.14E−07	—
$\mathbb{P}_5$	40	2.41E+04	×	9.96E−10	6.10	6.41E−09	4.57	1.27E−08	4.63
	80	5.38E+04	×	2.73E−11	5.19	9.81E−11	6.03	1.98E−10	6.00

Table 18: Numerical results of pure diffusion for $\phi(x) = \exp(x)$, $\kappa(x) = 1$, and $u(x) = 0$ (c6; non-uniform mesh).

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	3.94E+02	×	1.23E−02	—	1.03E−02	—	2.39E−02	—
$\mathbb{P}_1$	40	1.57E+03	×	4.61E−03	1.42	6.40E−03	0.68	1.46E−02	0.71
	80	6.38E+03	×	2.67E−03	0.79	4.55E−03	0.49	9.90E−03	0.56
	20	5.55E+02	×	3.43E−04	—	5.82E−04	—	1.33E−03	—
$\mathbb{P}_2$	40	2.28E+03	×	8.60E−05	2.00	1.08E−04	2.43	2.72E−04	2.29
	80	8.98E+03	×	1.92E−05	2.16	9.61E−06	3.49	3.33E−05	3.03
	20	6.44E+02	×	2.82E−05	—	5.77E−05	—	1.20E−04	—
$\mathbb{P}_3$	40	2.58E+03	×	1.98E−06	3.83	4.42E−06	3.71	9.14E−06	3.71
	80	1.01E+04	×	2.60E−07	2.93	8.22E−07	2.43	1.67E−06	2.45
	20	9.90E+02	×	1.32E−06	—	4.54E−06	—	8.82E−06	—
$\mathbb{P}_4$	40	3.53E+03	×	3.93E−08	5.07	1.18E−07	5.27	2.19E−07	5.33
	80	1.33E+04	×	1.78E−09	4.46	1.47E−08	3.00	2.80E−08	2.97
	20	1.08E+03	×	7.95E−08	—	3.99E−07	—	7.90E−07	—
$\mathbb{P}_5$	40	3.85E+03	×	1.13E−09	6.14	8.15E−09	5.62	1.61E−08	5.62
	80	1.41E+04	×	2.93E−11	5.27	3.51E−10	4.54	6.96E−10	4.53

$\epsilon = h^2$ – non-uniform mesh

Table 19: Numerical results of pure diffusion for $\phi(x) = \exp(x)$, $\kappa(x) = 1$, and $u(x) = 0$ (c1; non-uniform mesh).

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	6.54E+02	×	1.16E−02	—	2.84E−03	—	5.81E−03	—
$\mathbb{P}_1$	40	2.63E+03	×	3.60E−03	1.68	7.12E−04	2.00	1.51E−03	1.95
	80	1.06E+04	×	2.42E−03	0.57	1.77E−04	2.00	3.90E−04	1.95
	20	7.83E+02	×	3.13E−04	—	6.61E−05	—	1.94E−04	—
$\mathbb{P}_2$	40	3.42E+03	×	4.77E−05	2.71	2.51E−05	1.40	6.47E−05	1.59
	80	1.36E+04	×	1.58E−05	1.59	8.37E−06	1.58	2.06E−05	1.65
	20	9.73E+02	×	9.19E−06	—	2.36E−06	—	3.83E−06	—
$\mathbb{P}_3$	40	4.20E+03	×	7.01E−07	3.71	1.71E−07	3.78	3.11E−07	3.62
	80	1.68E+04	×	9.58E−08	2.87	7.22E−09	4.57	1.29E−08	4.59
	20	1.14E+03	×	3.05E−07	—	3.34E−08	—	8.37E−08	—
$\mathbb{P}_4$	40	4.83E+03	×	1.17E−08	4.71	2.58E−09	3.69	6.62E−09	3.66
	80	1.94E+04	×	6.67E−10	4.13	1.48E−10	4.12	3.86E−10	4.10
	20	1.33E+03	×	1.09E−08	—	3.78E−09	—	1.25E−08	—
$\mathbb{P}_5$	40	5.47E+03	×	2.10E−10	5.69	4.83E−11	6.29	1.54E−10	6.34
	80	2.22E+04	×	4.69E−12	5.49	7.65E−13	5.98	2.53E−12	5.93

Table 20: Numerical results of pure diffusion for $\phi(x) = \exp(x)$, $\kappa(x) = 1$, and $u(x) = 0$ (c2; non-uniform mesh).

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	3.74E+02	×	1.27E−02	—	8.71E−03	—	2.08E−02	—
$\mathbb{P}_1$	40	1.53E+03	×	4.65E−03	1.45	4.12E−03	1.08	1.01E−02	1.05
	80	6.29E+03	×	2.68E−03	0.80	2.00E−03	1.04	4.82E−03	1.06
	20	5.09E+02	×	3.58E−04	—	3.76E−04	—	9.44E−04	—
$\mathbb{P}_2$	40	2.17E+03	×	8.70E−05	2.04	1.28E−04	1.56	3.10E−04	1.61
	80	8.70E+03	×	1.93E−05	2.17	3.52E−05	1.86	8.42E−05	1.88
	20	5.74E+02	×	2.71E−05	—	1.07E−05	—	1.92E−05	—
$\mathbb{P}_3$	40	2.43E+03	×	1.95E−06	3.80	6.72E−07	4.00	1.25E−06	3.94
	80	9.80E+03	×	2.59E−07	2.91	4.08E−08	4.04	7.41E−08	4.08
	20	7.31E+02	×	1.27E−06	—	8.44E−07	—	1.99E−06	—
$\mathbb{P}_4$	40	3.03E+03	×	3.86E−08	5.04	6.94E−08	3.60	1.61E−07	3.62
	80	1.21E+04	×	1.77E−09	4.45	4.53E−09	3.94	1.07E−08	3.92
	20	7.76E+02	×	7.59E−08	—	3.71E−08	—	7.41E−08	—
$\mathbb{P}_5$	40	3.22E+03	×	1.10E−09	6.11	1.02E−09	5.19	2.21E−09	5.07
	80	1.28E+04	×	2.91E−11	5.24	2.55E−11	5.32	5.77E−11	5.26

Table 21: Numerical results of pure diffusion for $\phi(x) = \exp(x)$, $\kappa(x) = 1$, and $u(x) = 0$ (c3; non-uniform mesh).

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	6.57E+02	×	1.19E−02	—	7.68E−04	—	1.38E−03	—
$\mathbb{P}_1$	40	2.63E+03	×	3.56E−03	1.75	8.35E−05	3.20	1.61E−04	3.10
	80	1.06E+04	×	2.43E−03	0.55	4.98E−05	0.75	1.00E−04	0.68
	20	7.83E+02	×	3.24E−04	—	1.87E−04	—	4.32E−04	—
$\mathbb{P}_2$	40	3.42E+03	×	4.83E−05	2.74	3.79E−05	2.30	9.02E−05	2.26
	80	1.36E+04	×	1.59E−05	1.61	1.02E−05	1.90	2.41E−05	1.90
	20	9.73E+02	×	9.55E−06	—	2.31E−06	—	6.95E−06	—
$\mathbb{P}_3$	40	4.20E+03	×	7.11E−07	3.75	1.09E−07	4.41	3.11E−07	4.48
	80	1.68E+04	×	9.61E−08	2.89	8.78E−09	3.63	2.64E−08	3.56
	20	1.14E+03	×	3.17E−07	—	2.10E−07	—	4.28E−07	—
$\mathbb{P}_4$	40	4.83E+03	×	1.19E−08	4.74	2.87E−09	6.19	5.83E−09	6.20
	80	1.94E+04	×	6.70E−10	4.14	3.38E−11	6.41	7.08E−11	6.36
	20	1.33E+03	×	1.13E−08	—	1.15E−08	—	2.81E−08	—
$\mathbb{P}_5$	40	5.47E+03	×	2.14E−10	5.73	1.65E−10	6.12	3.89E−10	6.18
	80	2.22E+04	×	4.71E−12	5.50	2.35E−12	6.13	5.75E−12	6.08

Table 22: Numerical results of pure diffusion for $\phi(x) = \exp(x)$, $\kappa(x) = 1$, and $u(x) = 0$ (c4; non-uniform mesh).

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	3.76E+02	×	1.24E−02	—	6.04E−03	—	1.53E−02	—
$\mathbb{P}_1$	40	1.53E+03	×	4.61E−03	1.42	3.40E−03	0.83	8.62E−03	0.83
	80	6.29E+03	×	2.67E−03	0.79	1.82E−03	0.90	4.47E−03	0.95
	20	5.09E+02	×	3.43E−04	—	5.31E−04	—	1.24E−03	—
$\mathbb{P}_2$	40	2.17E+03	×	8.61E−05	1.99	1.48E−04	1.84	3.50E−04	1.82
	80	8.70E+03	×	1.92E−05	2.16	3.73E−05	1.99	8.84E−05	1.98
	20	5.74E+02	×	2.82E−05	—	1.68E−06	—	9.49E−06	—
$\mathbb{P}_3$	40	2.43E+03	×	1.98E−06	3.83	7.91E−08	4.41	4.94E−07	4.27
	80	9.80E+03	×	2.60E−07	2.93	1.01E−08	2.97	5.38E−08	3.20
	20	7.32E+02	×	1.32E−06	—	4.44E−07	—	1.13E−06	—
$\mathbb{P}_4$	40	3.03E+03	×	3.93E−08	5.07	5.44E−08	3.03	1.32E−07	3.10
	80	1.21E+04	×	1.78E−09	4.46	4.00E−09	3.77	9.62E−09	3.78
	20	7.77E+02	×	7.94E−08	—	5.57E−09	—	2.34E−08	—
$\mathbb{P}_5$	40	3.22E+03	×	1.13E−09	6.14	3.50E−10	3.99	9.59E−10	4.61
	80	1.28E+04	×	2.93E−11	5.27	1.49E−11	4.56	3.71E−11	4.69

Table 23: Numerical results of pure diffusion for $\phi(x) = \exp(x)$, $\kappa(x) = 1$, and $u(x) = 0$ (c5; non-uniform mesh).

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	4.54E+02	×	1.18E−02	—	5.68E−03	—	1.44E−02	—
$\mathbb{P}_1$	40	1.97E+03	×	4.46E−03	1.40	3.91E−03	0.54	9.58E−03	0.59
	80	7.89E+03	×	2.64E−03	0.76	1.80E−03	1.12	4.41E−03	1.12
	20	7.38E+02	×	3.16E−04	—	3.55E−04	—	9.01E−04	—
$\mathbb{P}_2$	40	3.02E+03	×	8.39E−05	1.91	1.06E−04	1.75	2.68E−04	1.75
	80	1.23E+04	×	1.89E−05	2.15	3.44E−05	1.62	8.27E−05	1.69
	20	9.77E+02	×	2.52E−05	—	9.03E−06	—	1.55E−05	—
$\mathbb{P}_3$	40	4.08E+03	×	1.83E−06	3.79	8.59E−07	3.39	1.57E−06	3.31
	80	1.64E+04	×	2.52E−07	2.86	4.44E−08	4.28	7.90E−08	4.31
	20	1.20E+03	×	1.20E−06	—	8.19E−07	—	1.94E−06	—
$\mathbb{P}_4$	40	4.94E+03	×	3.63E−08	5.05	7.86E−08	3.38	1.79E−07	3.44
	80	1.99E+04	×	1.69E−09	4.42	4.66E−09	4.08	1.09E−08	4.04
	20	1.44E+03	×	6.82E−08	—	5.18E−09	—	1.33E−08	—
$\mathbb{P}_5$	40	5.82E+03	×	9.96E−10	6.10	6.63E−10	2.97	1.51E−09	3.14
	80	2.37E+04	×	2.73E−11	5.19	1.87E−11	5.15	4.40E−11	5.10

Table 24: Numerical results of pure diffusion for $\phi(x) = \exp(x)$, $\kappa(x) = 1$, and $u(x) = 0$ (c6; non-uniform mesh).

	I	cond(A)	$A^{-1} \geq 0$	$E_{c,1}$	$O_{c,1}$	E_1	O_1	E_∞	O_∞
	20	3.75E+02	×	1.23E−02	—	5.92E−03	—	1.51E−02	—
$\mathbb{P}_1$	40	1.53E+03	×	4.61E−03	1.42	3.42E−03	0.79	8.65E−03	0.80
	80	6.29E+03	×	2.67E−03	0.79	1.85E−03	0.89	4.53E−03	0.94
	20	5.09E+02	×	3.44E−04	—	5.27E−04	—	1.23E−03	—
$\mathbb{P}_2$	40	2.17E+03	×	8.60E−05	2.00	1.45E−04	1.86	3.43E−04	1.84
	80	8.70E+03	×	1.92E−05	2.16	3.68E−05	1.98	8.74E−05	1.97
	20	5.75E+02	×	2.83E−05	—	3.23E−06	—	1.32E−05	—
$\mathbb{P}_3$	40	2.43E+03	×	1.98E−06	3.83	1.11E−07	4.86	5.86E−07	4.50
	80	9.80E+03	×	2.60E−07	2.93	9.91E−09	3.49	5.35E−08	3.45
	20	7.33E+02	×	1.32E−06	—	3.93E−07	—	1.00E−06	—
$\mathbb{P}_4$	40	3.04E+03	×	3.93E−08	5.07	5.50E−08	2.84	1.34E−07	2.91
	80	1.21E+04	×	1.78E−09	4.46	3.98E−09	3.79	9.57E−09	3.80
	20	7.76E+02	×	7.95E−08	—	1.06E−08	—	3.38E−08	—
$\mathbb{P}_5$	40	3.22E+03	×	1.13E−09	6.14	3.13E−10	5.08	8.87E−10	5.25
	80	1.28E+04	×	2.93E−11	5.27	1.41E−11	4.47	3.57E−11	4.64