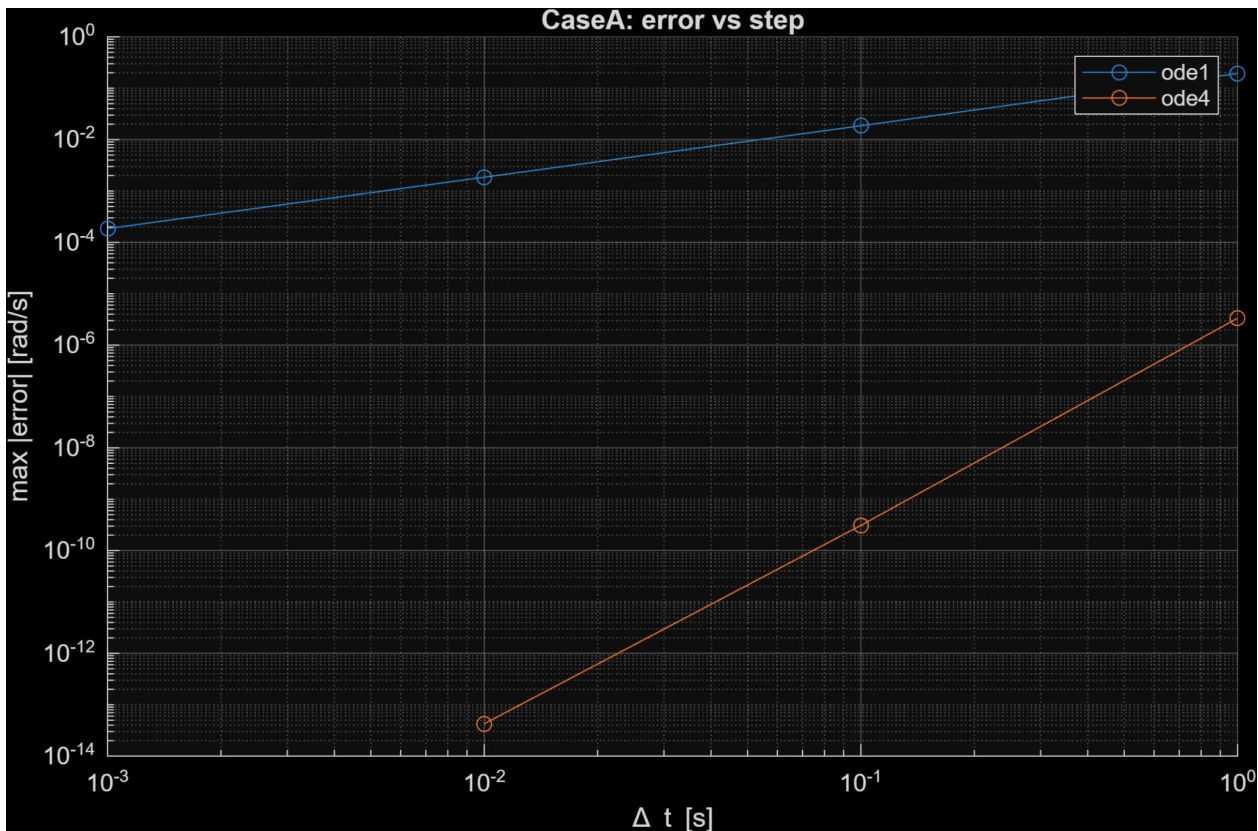
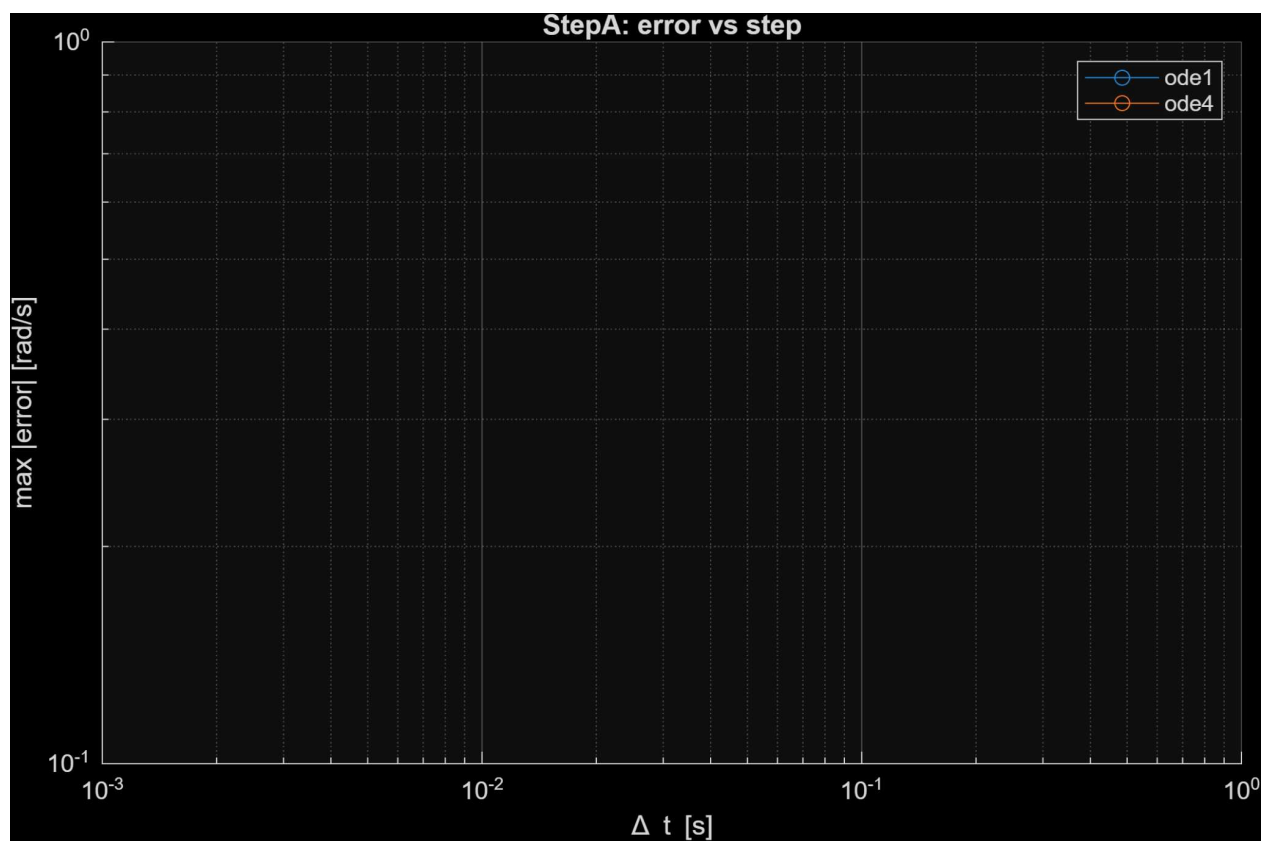
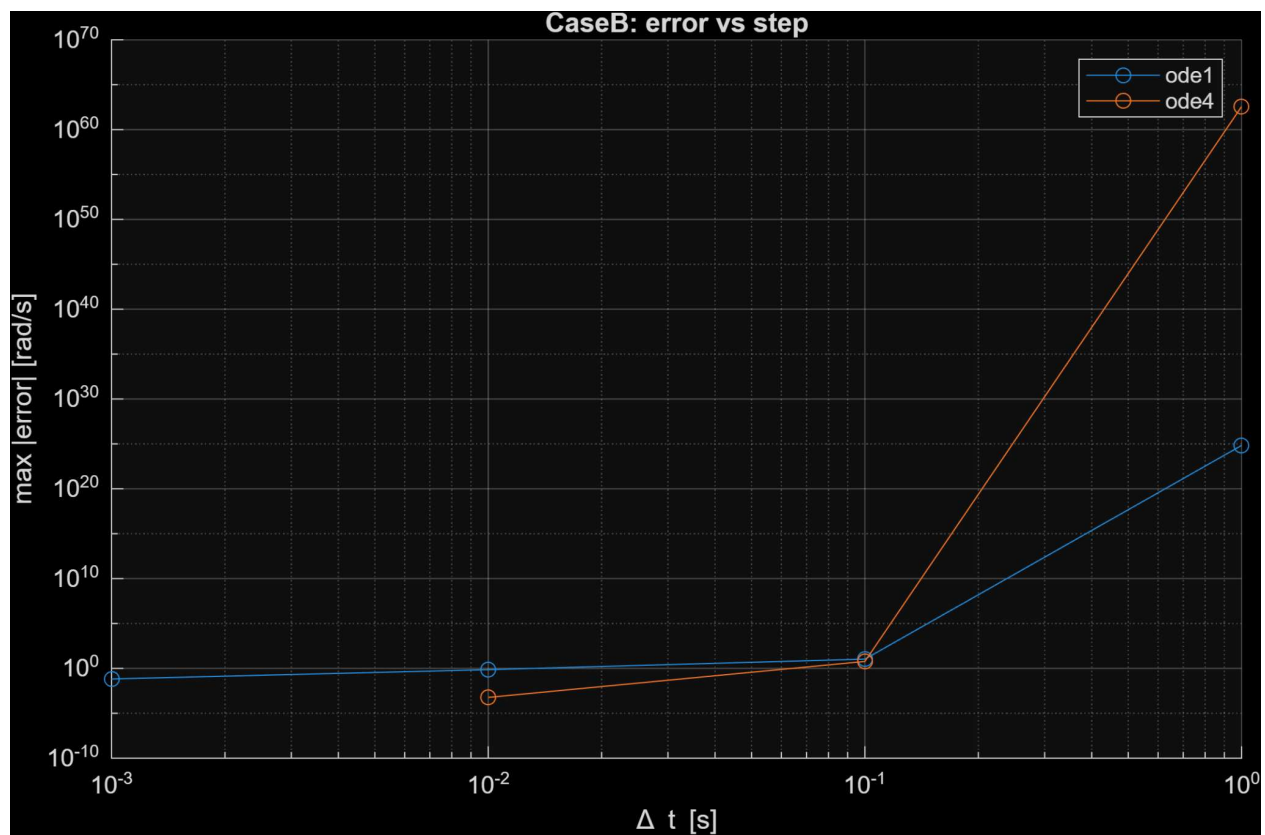
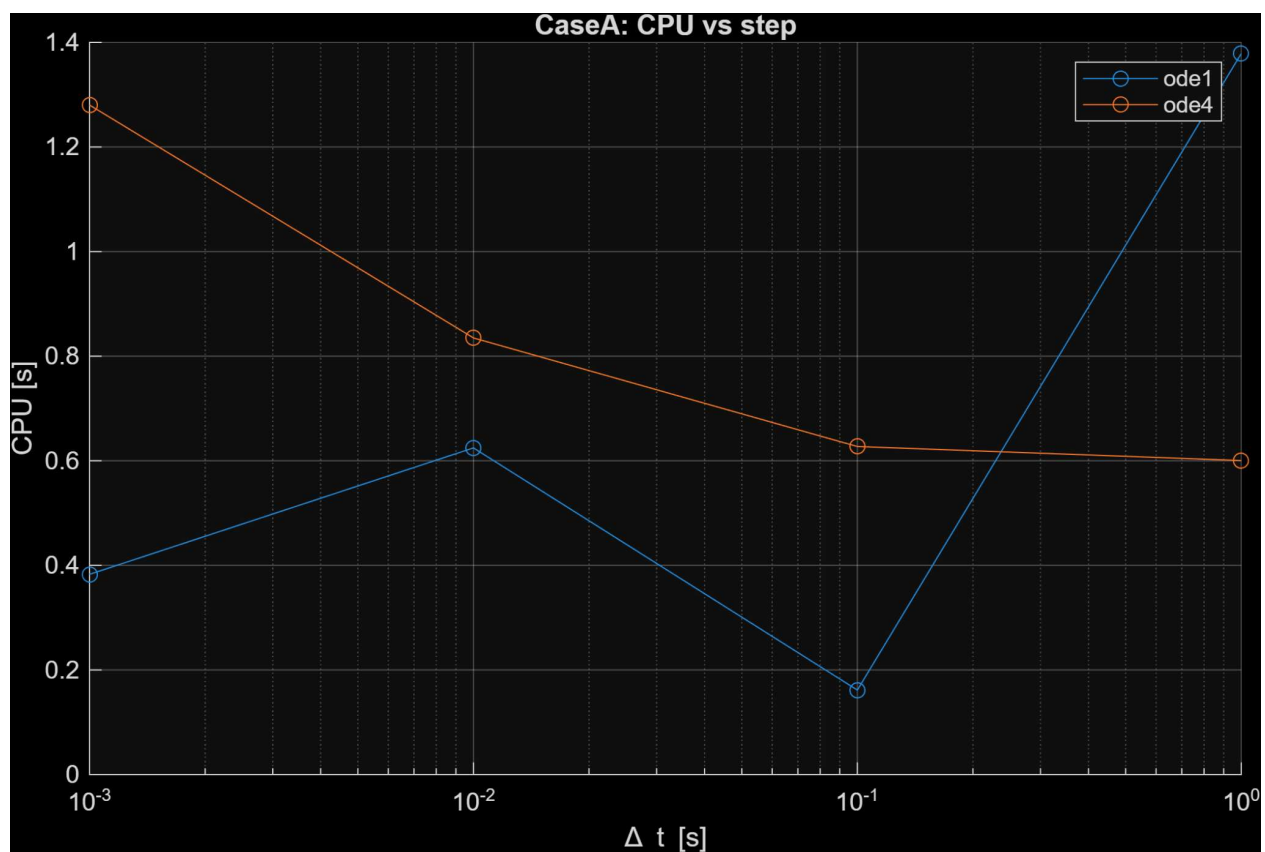
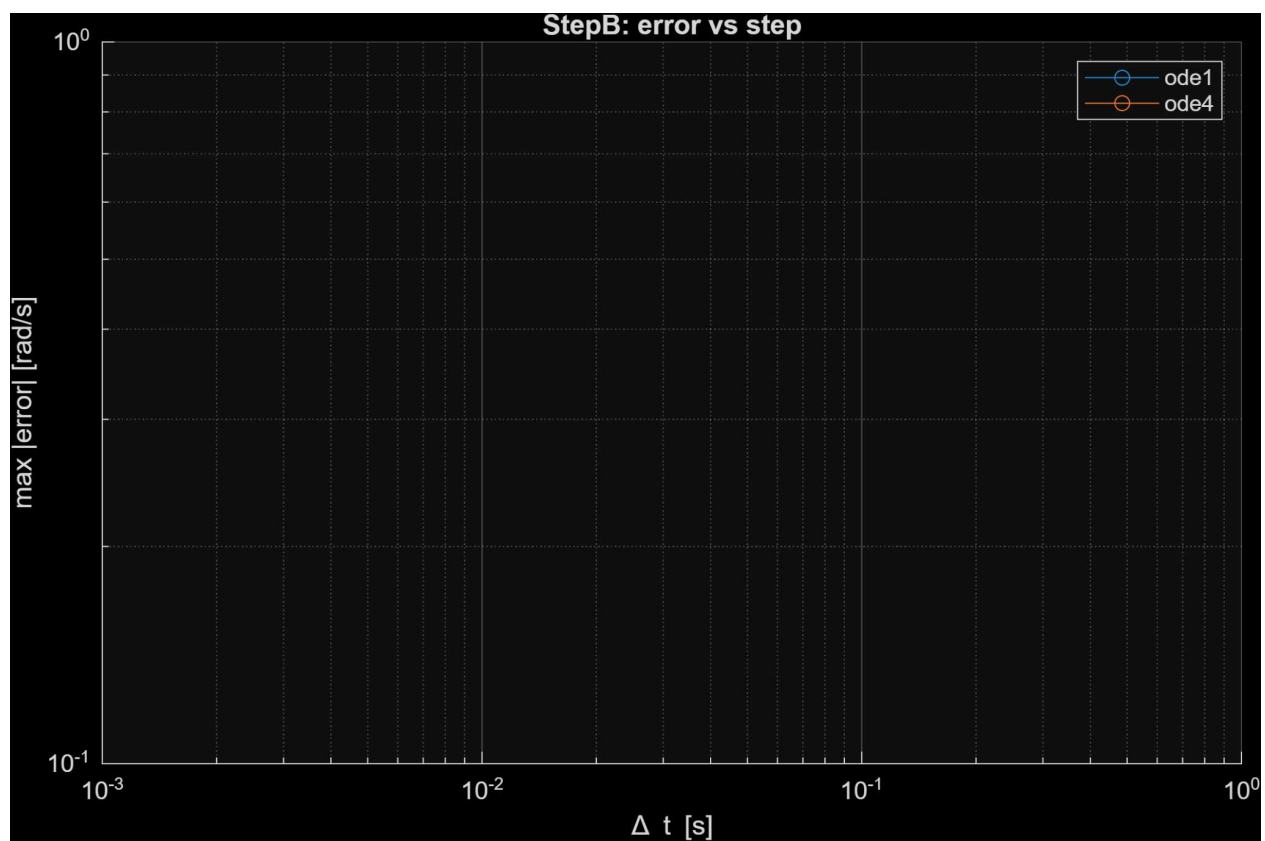


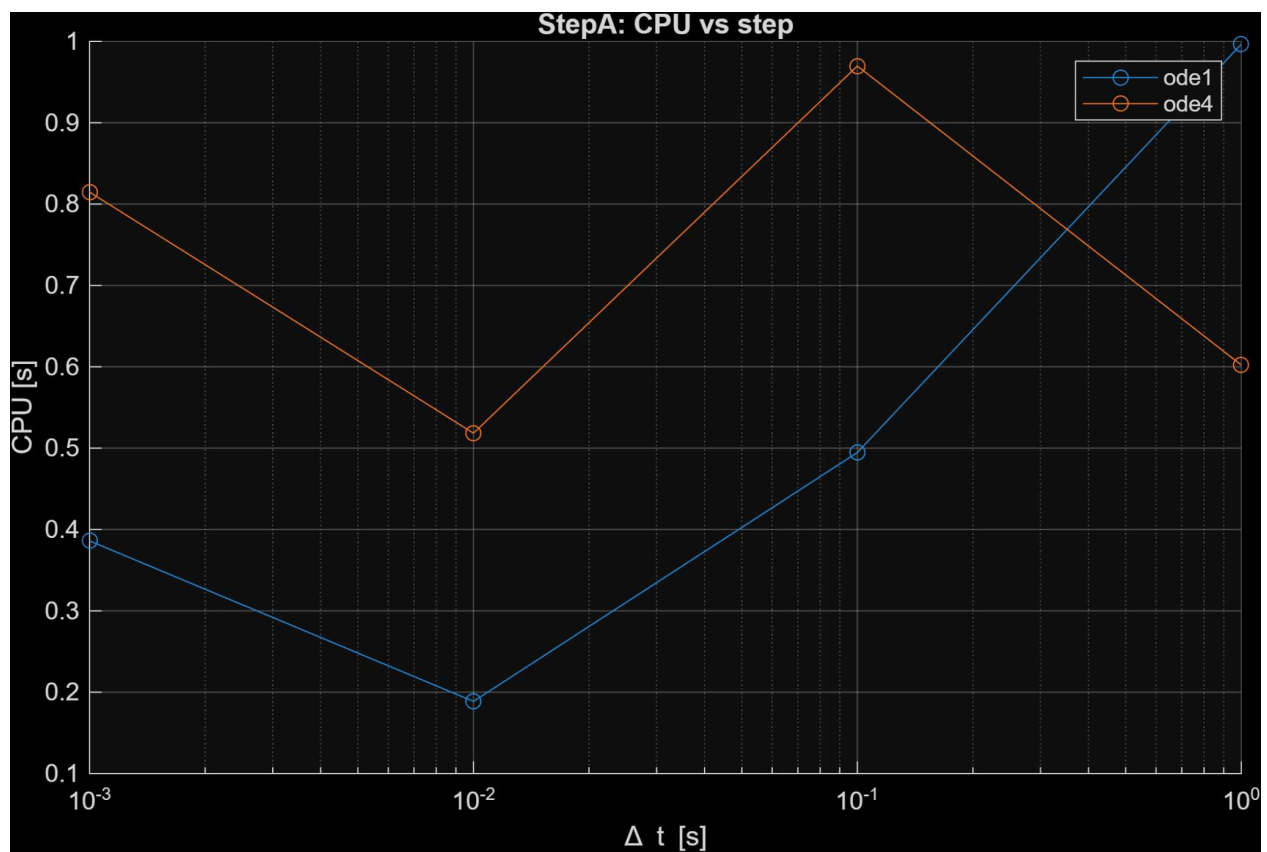
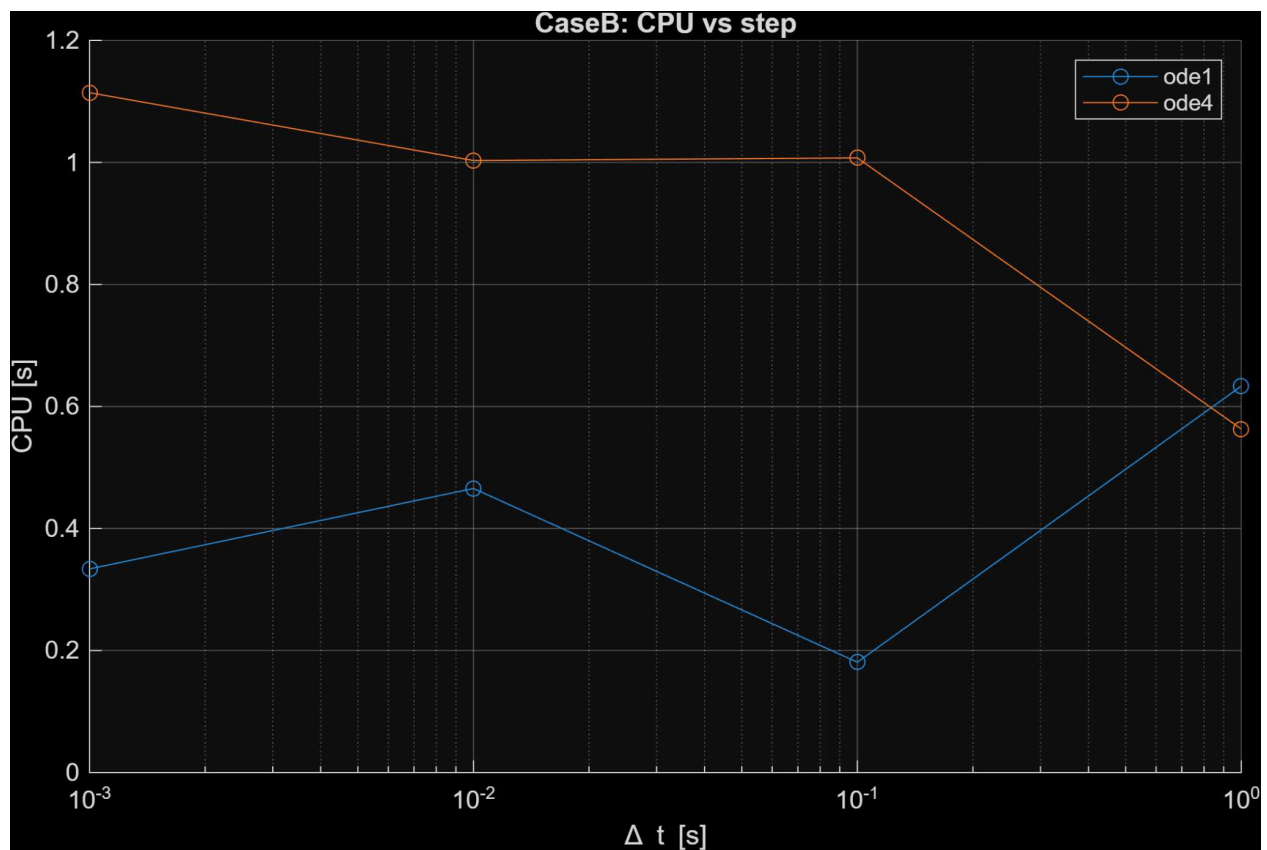
Project 1 Graphs & Tables

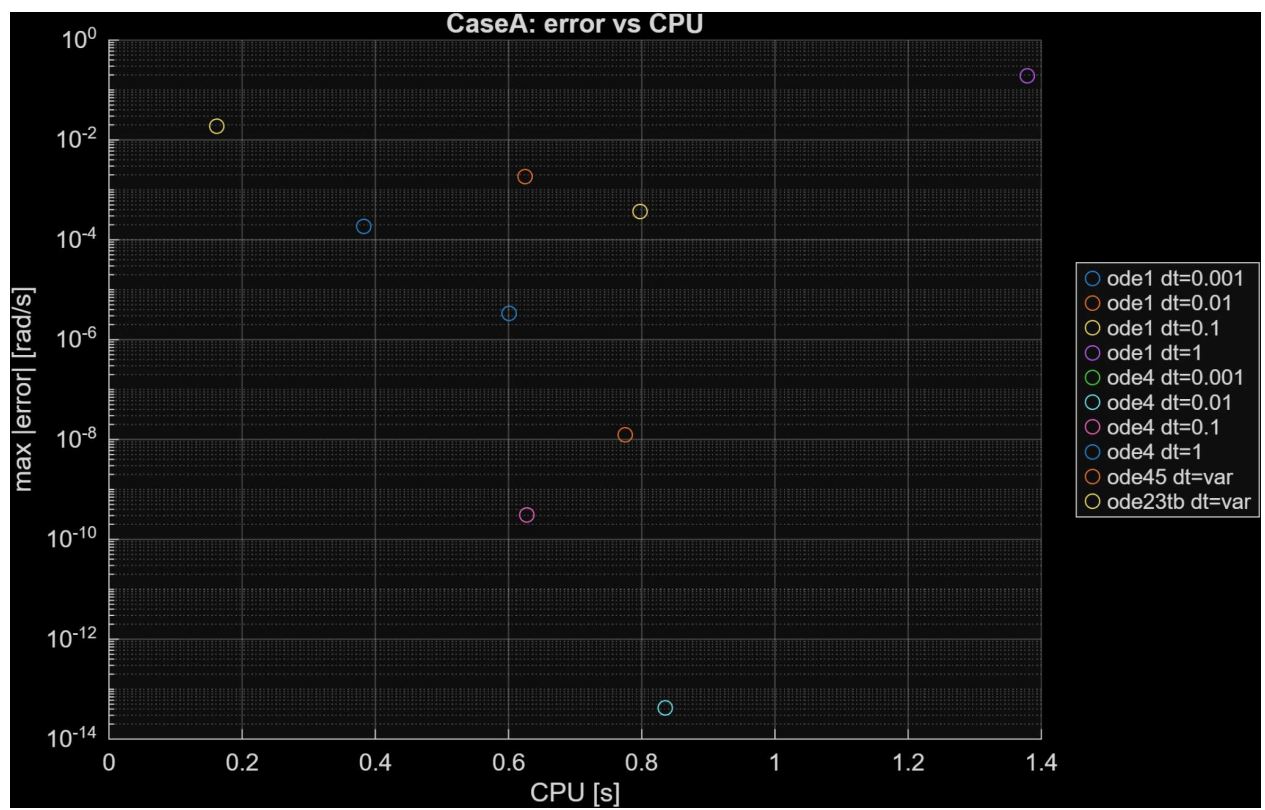
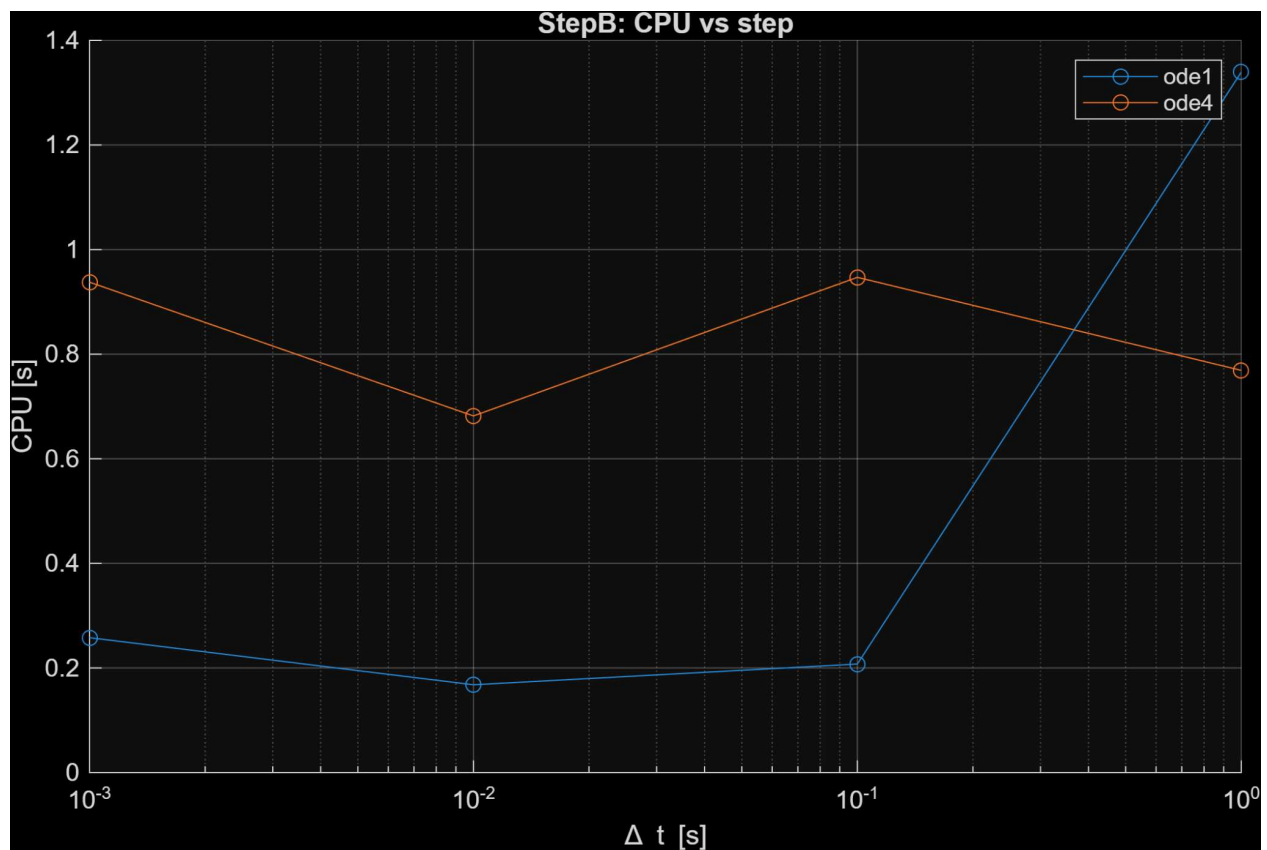
Part 1:

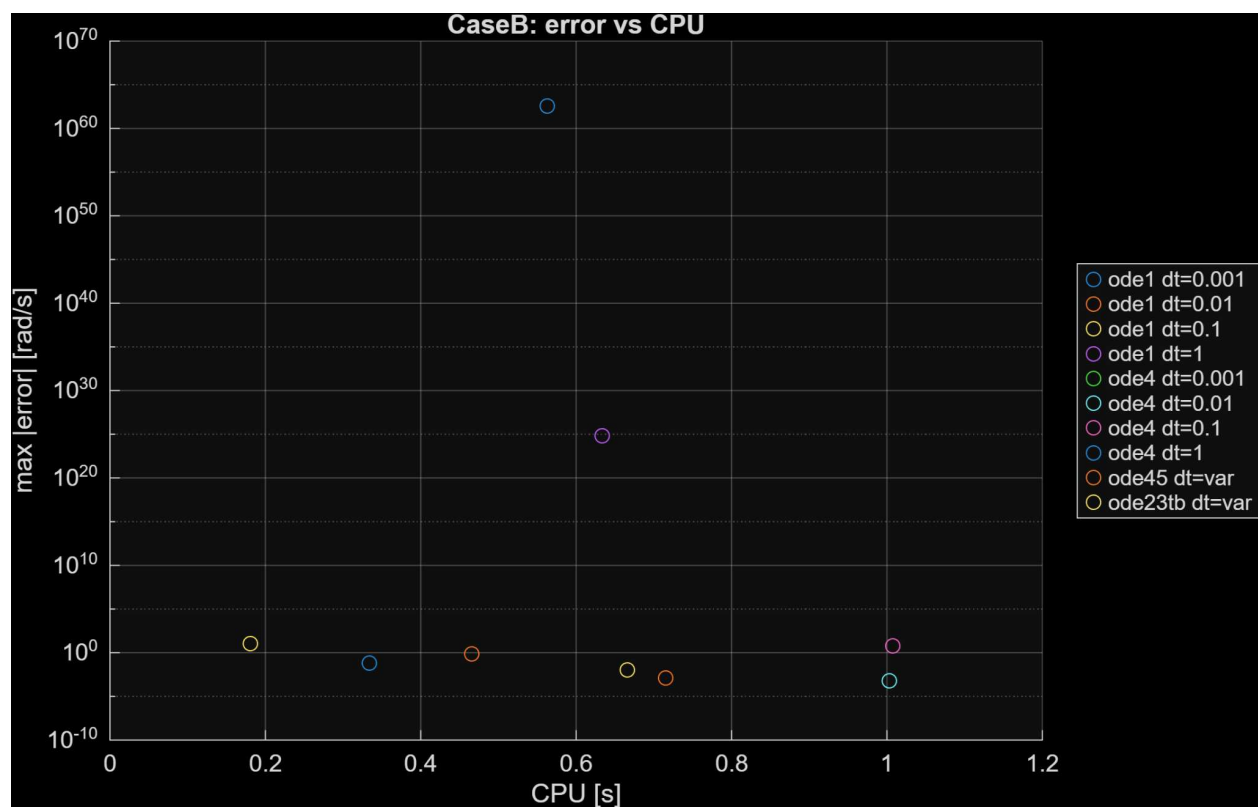


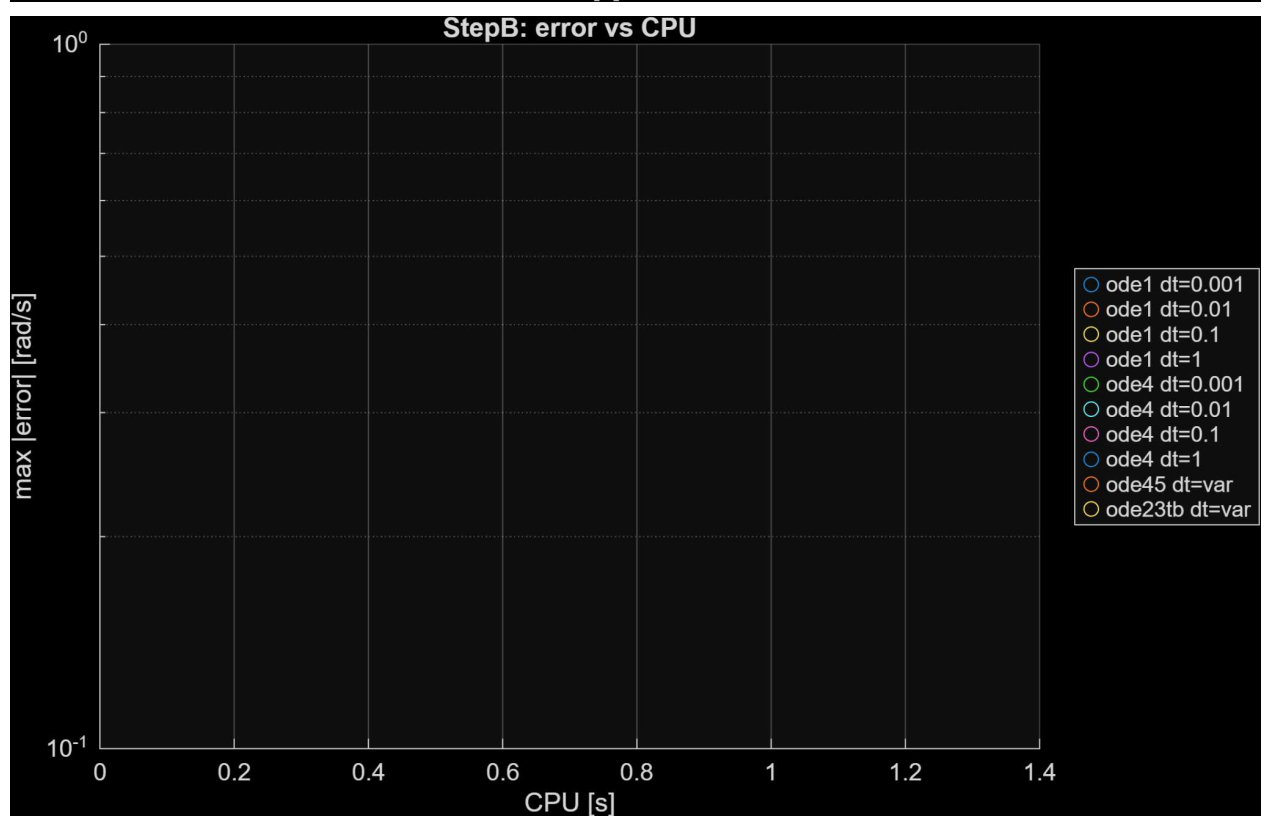
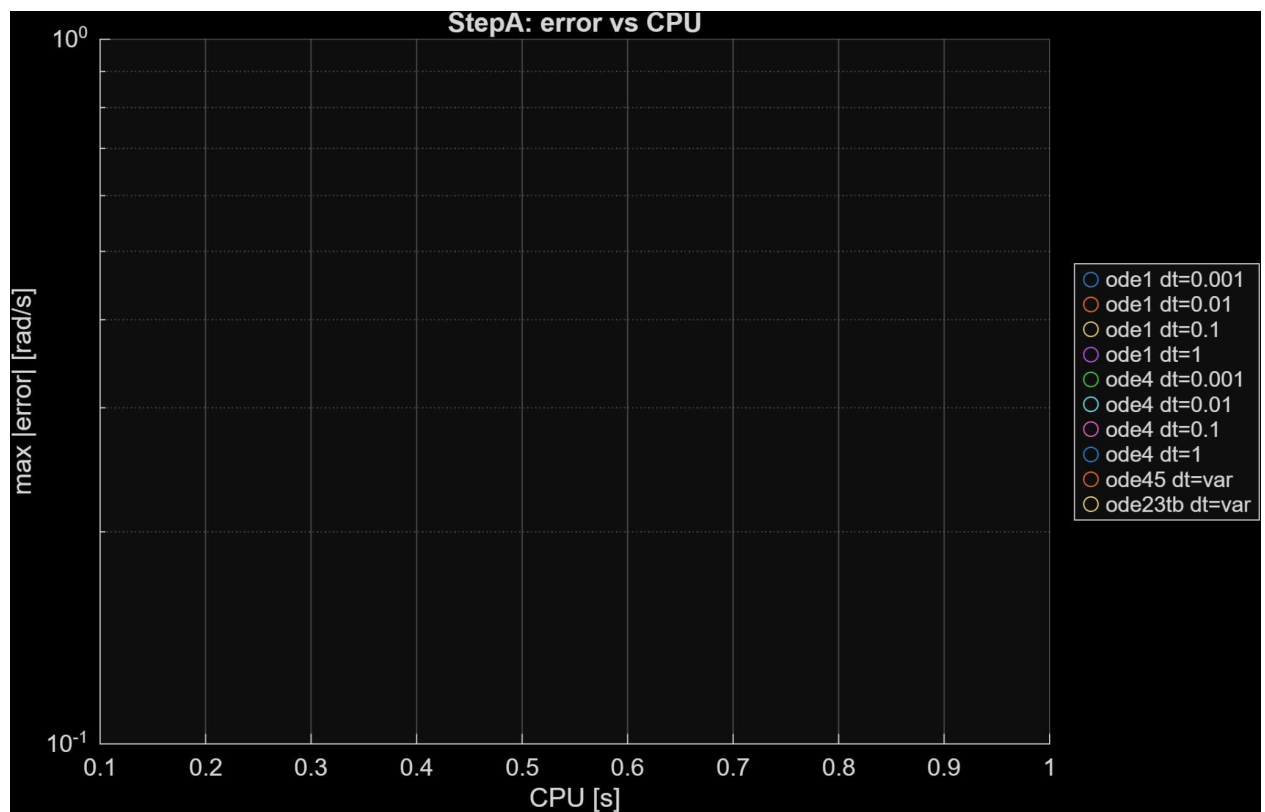












==== StepA (J=100, b=10, freq=0.1) ====

solver	dt	cpu_s	maxErr
<hr/>			
"ode1"	"0.001"	0.4557	0
"ode1"	"0.01"	1.0441	0
"ode1"	"0.1"	1.2593	0
"ode1"	"1"	0.66868	0
"ode4"	"0.001"	1.224	0
"ode4"	"0.01"	1.3462	0
"ode4"	"0.1"	1.2176	0
"ode4"	"1"	1.7304	0
"ode45"	"var"	1.0231	0
"ode23tb"	"var"	0.98872	0

==== StepB (J=100, b=10, freq=0.1) ====

solver	dt	cpu_s	maxErr
<hr/>			
"ode1"	"0.001"	0.98848	0
"ode1"	"0.01"	1.4913	0
"ode1"	"0.1"	0.7831	0
"ode1"	"1"	0.79906	0
"ode4"	"0.001"	1.9248	0
"ode4"	"0.01"	1.288	0
"ode4"	"0.1"	1.4512	0
"ode4"	"1"	1.1868	0
"ode45"	"var"	0.8562	0
"ode23tb"	"var"	1.1854	0

==== CaseA (J=100, b=10, freq=0.1) ====

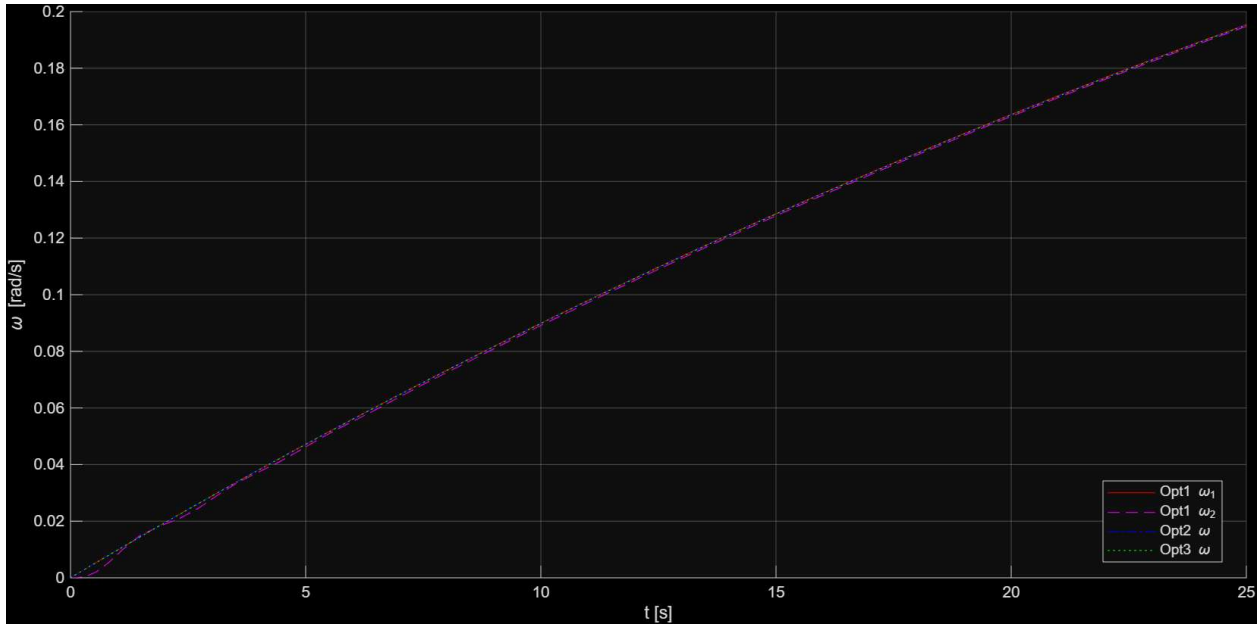
solver	dt	cpu_s	maxErr
<hr/>			
"ode1"	"0.001"	1.1951	0.0001853
"ode1"	"0.01"	0.89849	0.0018537
"ode1"	"0.1"	0.84097	0.018608
"ode1"	"1"	0.95413	0.19344
"ode4"	"0.001"	1.2413	0
"ode4"	"0.01"	1.192	4.2633e-14
"ode4"	"0.1"	0.79783	3.1015e-10
"ode4"	"1"	1.6304	3.3447e-06
"ode45"	"var"	1.0811	1.2523e-08
"ode23tb"	"var"	0.65259	0.00037062

==== CaseB (J=0.01, b=0.1, freq=100) ====

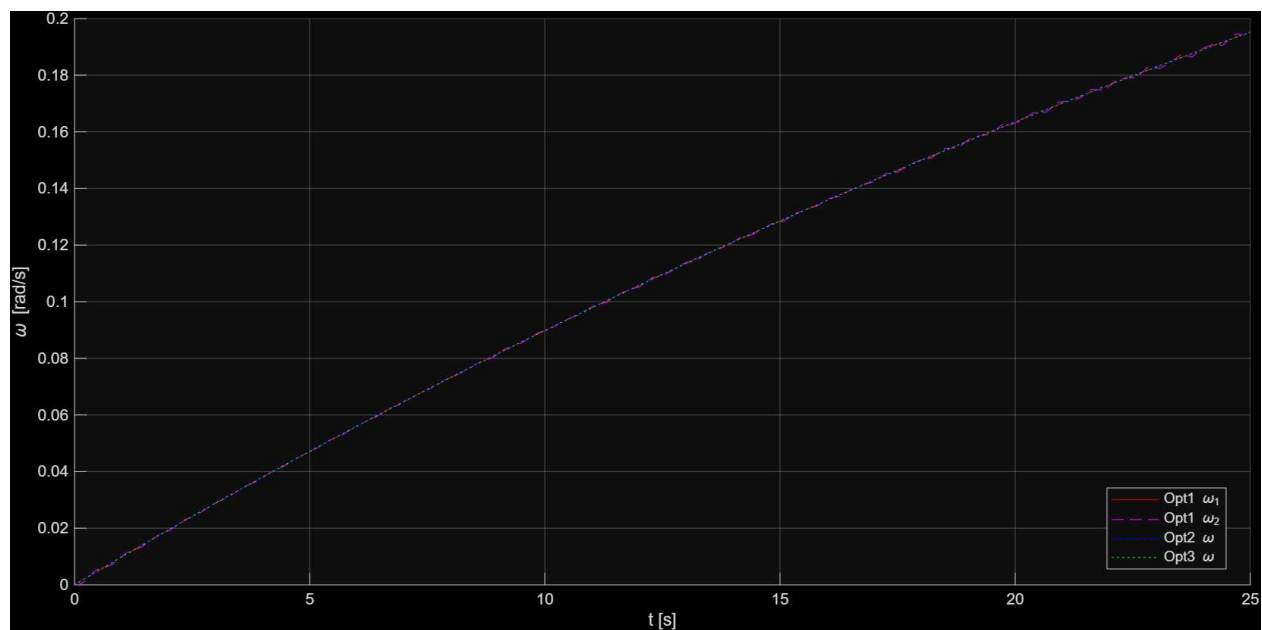
solver	dt	cpu_s	maxErr
<hr/>			

"ode1"	"0.001"	1.3525	0.066531
"ode1"	"0.01"	1.2997	0.72173
"ode1"	"0.1"	1.5035	10.816
"ode1"	"1"	0.95876	6.8062e+24
"ode4"	"0.001"	0.99461	0
"ode4"	"0.01"	1.1884	0.00058777
"ode4"	"0.1"	1.0922	5.9722
"ode4"	"1"	1.2513	3.7493e+62
"ode45"	"var"	0.94307	0.0012829
"ode23tb"	"var"	1.1825	0.010793

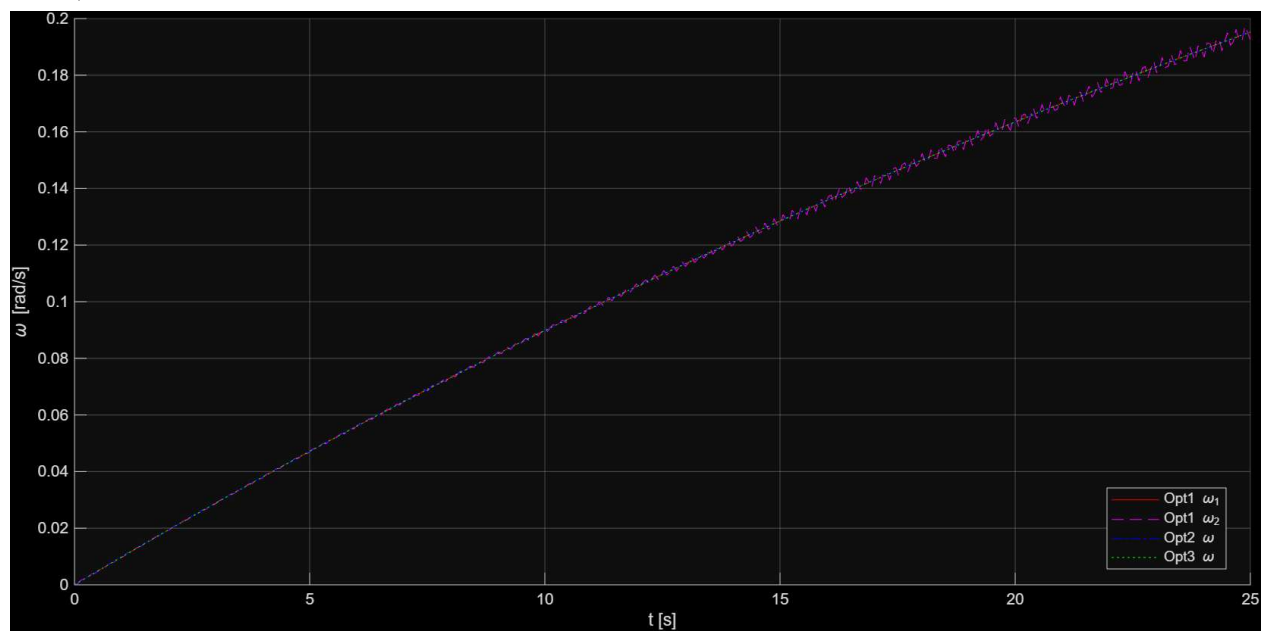
Part 2:
A = 1 k = 10



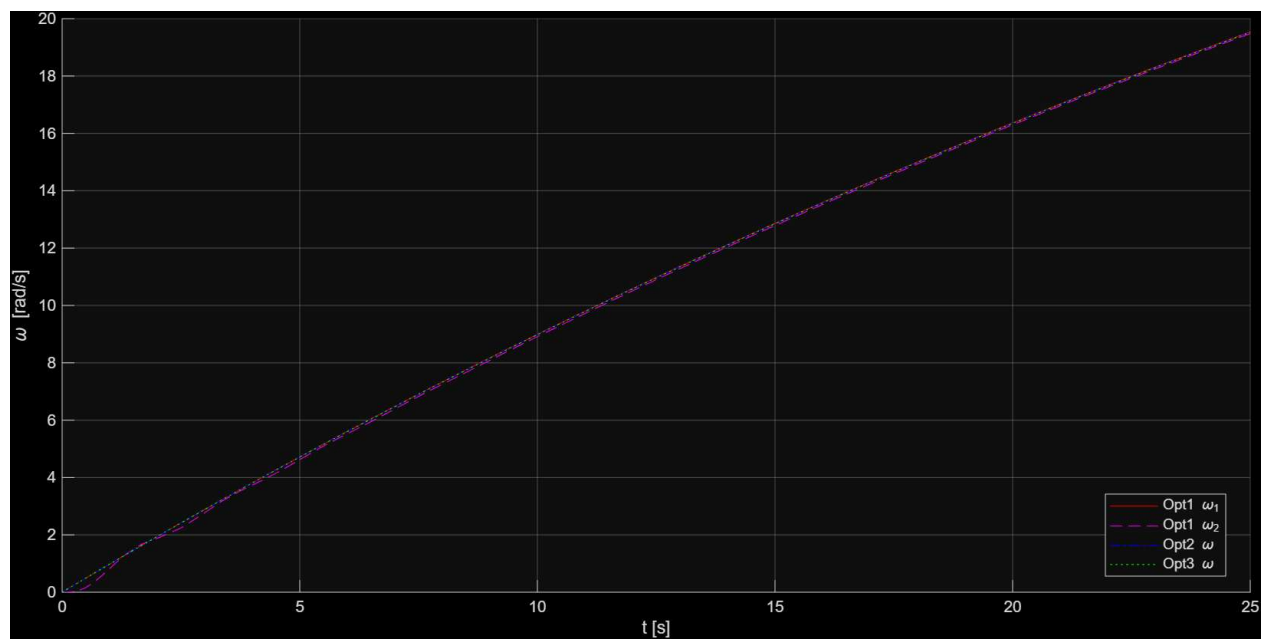
A = 1 k = 100



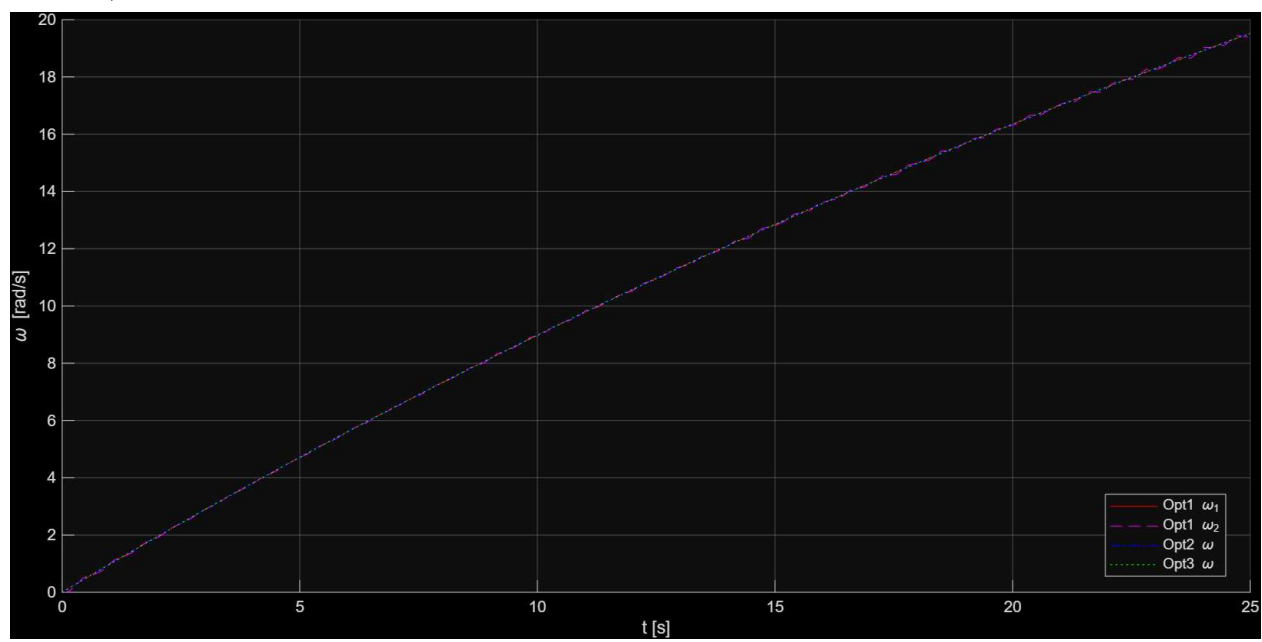
$A = 1$, $k = 1000$



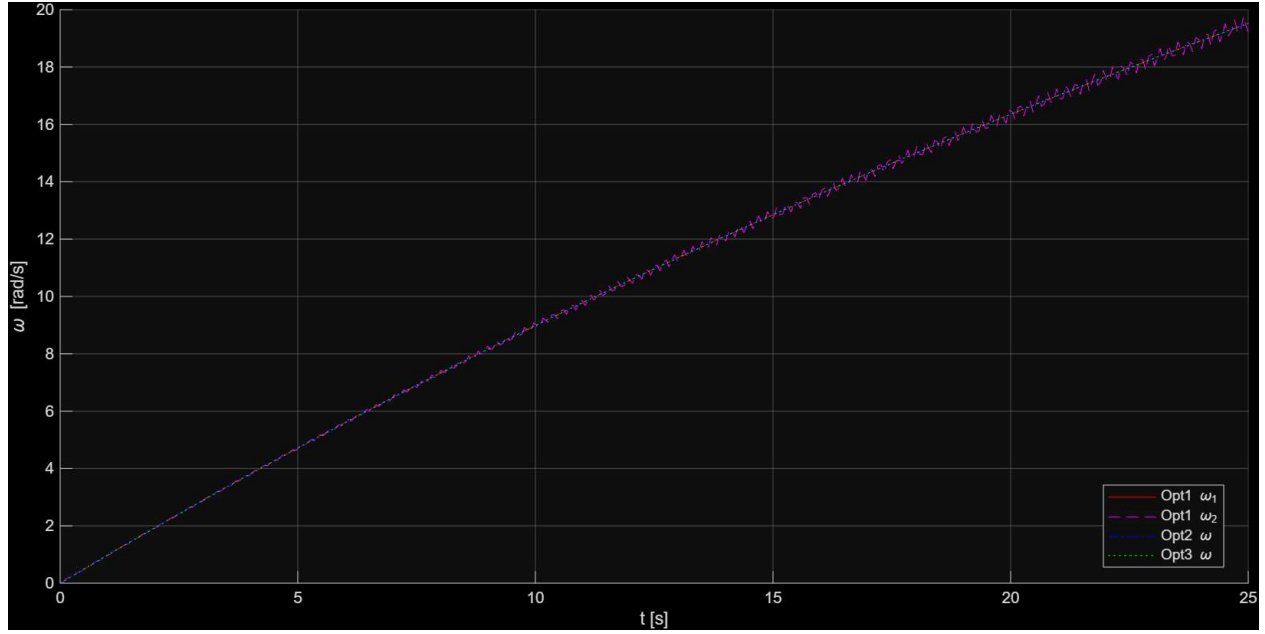
$A = 100$ $k = 10$



$A = 100, k = 100$



$A = 100, k = 1000$



CPU Table

case	cpu_opt1	cpu_opt2	cpu_opt3
"A=1 k=10 ode45"	0.63202	0.81256	0.79827
"A=1 k=10 ode1 dt=0.1"	1.0407	1.6048	1.3227
"A=1 k=10 ode1 dt=1"	1.2836	1.7628	1.0484
"A=1 k=10 ode4 dt=0.1"	2.0665	1.8298	1.4185
"A=1 k=10 ode4 dt=1"	1.6698	1.623	1.398
"A=1 k=100 ode45"	1.3751	1.4596	1.3461
"A=1 k=100 ode1 dt=0.1"	1.4162	1.7965	1.3772
"A=1 k=100 ode1 dt=1"	1.618	1.3725	1.5101
"A=1 k=100 ode4 dt=0.1"	1.5625	1.4739	1.5259
"A=1 k=100 ode4 dt=1"	1.7591	1.3199	1.541
"A=1 k=1000 ode45"	1.1985	1.5183	1.2896
"A=1 k=1000 ode1 dt=0.1"	1.4751	1.6521	1.5289
"A=1 k=1000 ode1 dt=1"	1.4291	1.4468	1.3304
"A=1 k=1000 ode4 dt=0.1"	1.6034	1.535	1.4217
"A=1 k=1000 ode4 dt=1"	1.8467	1.3904	1.4463
"A=100 k=10 ode45"	1.4881	1.8532	1.3181
"A=100 k=10 ode1 dt=0.1"	1.4459	1.5243	1.314
"A=100 k=10 ode1 dt=1"	1.7695	1.616	1.4147

"A=100	k=10	ode4 dt=0.1"	1.3309	1.7514	1.4592
"A=100	k=10	ode4 dt=1"	1.4803	1.7245	0.88828
"A=100	k=100	ode45"	0.61757	1.5423	1.4617
"A=100	k=100	ode1 dt=0.1"	1.7278	1.8071	1.4467
"A=100	k=100	ode1 dt=1"	1.3365	1.504	1.3272
"A=100	k=100	ode4 dt=0.1"	1.4239	1.7786	1.3807
"A=100	k=100	ode4 dt=1"	1.5565	1.7657	1.2953
"A=100	k=1000	ode45"	1.2205	2.0343	1.1704
"A=100	k=1000	ode1 dt=0.1"	1.4288	1.6064	1.2219
"A=100	k=1000	ode1 dt=1"	1.5034	1.55	1.3387
"A=100	k=1000	ode4 dt=0.1"	1.5828	1.7529	1.293
"A=100	k=1000	ode4 dt=1"	1.4818	1.6606	1.1809