Testing for relaxation factor imax=jmax=50, CFL time step, tau=0.5, t_end=50seconds

ω	convergence	stabilty	Total Computational Time(sec)
0	no	yes	-
0.5	no	yes	-
1	no	yes	-
1.5	no	yes	-
1.6	no	yes	-
1.7	yes	yes	3.609
1.8	yes	yes	3.745
2	no	yes	-

Testing for time step, imax=jmax=50, negative tau, t_end=50seconds

Time Steps	convergence	stabilty	Total Computational Time(sec)
0.05	no	no	-
0.01	no	no	-
0.005	yes	yes	3.578
0.0005	yes	yes	27.031

Effect of grid size on U[imax/2][7*jmax/8] at Time Step = 0.005, tau=0.5, t_end=100seconds

imax = jmax	U[imax/2][7*jmax/8]	Comments
16	0.183833	-
32	0.242975	-
64	0.276453	SOR not converging
128	∞	SOR not converging
256	∞	SOR not converging

Effect of grid size on U[imax/2][7*jmax/8] at Time Step = 0.05, tau=0.5, t_end=100seconds

imax = jmax	U[imax/2][7*jmax/8]	Comments
16	0.183833	-
32	∞	SOR not converging
64	∞	SOR not converging
128	∞	SOR not converging
256	∞	SOR not converging

Effect of Reynold's Number with imax=jmax=50, CFL time step, tau=0.5, t_end=50seconds

Re	convergence	stabilty	Total Computational Time(sec)
100	yes	yes	3.609
500	yes	yes	1.906
2000	yes	yes	1.515
10000	yes	yes	1.015

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