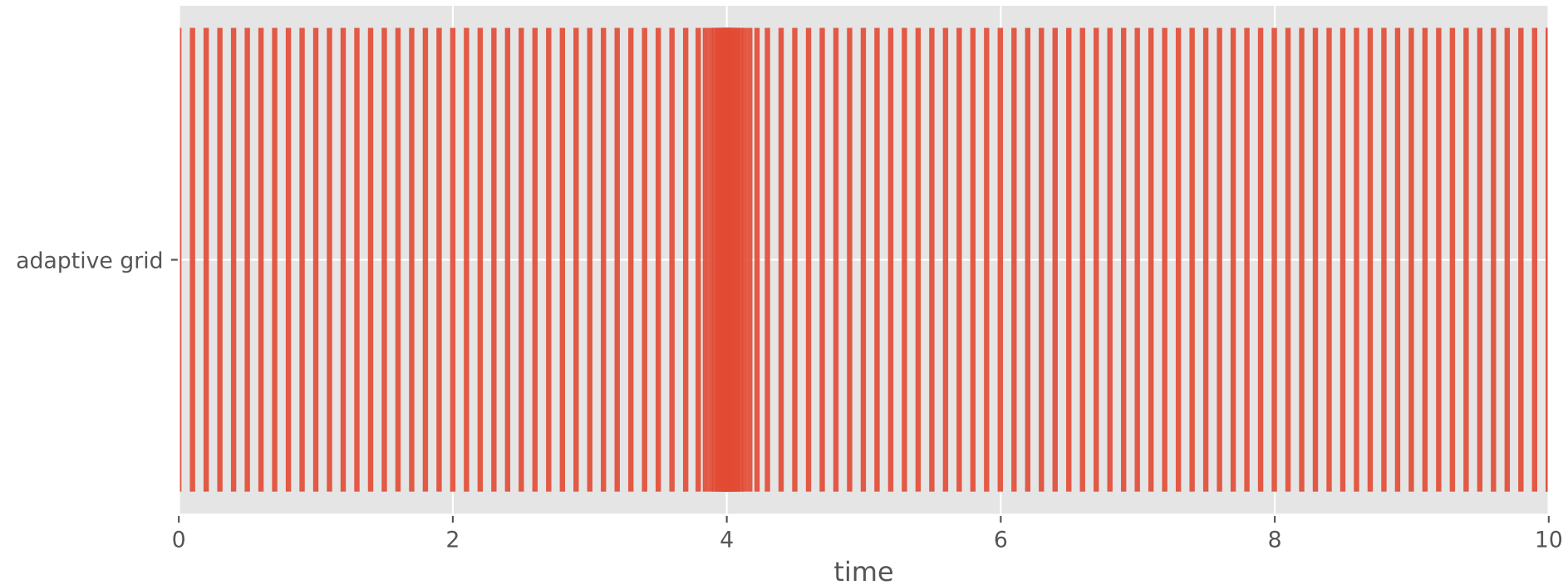


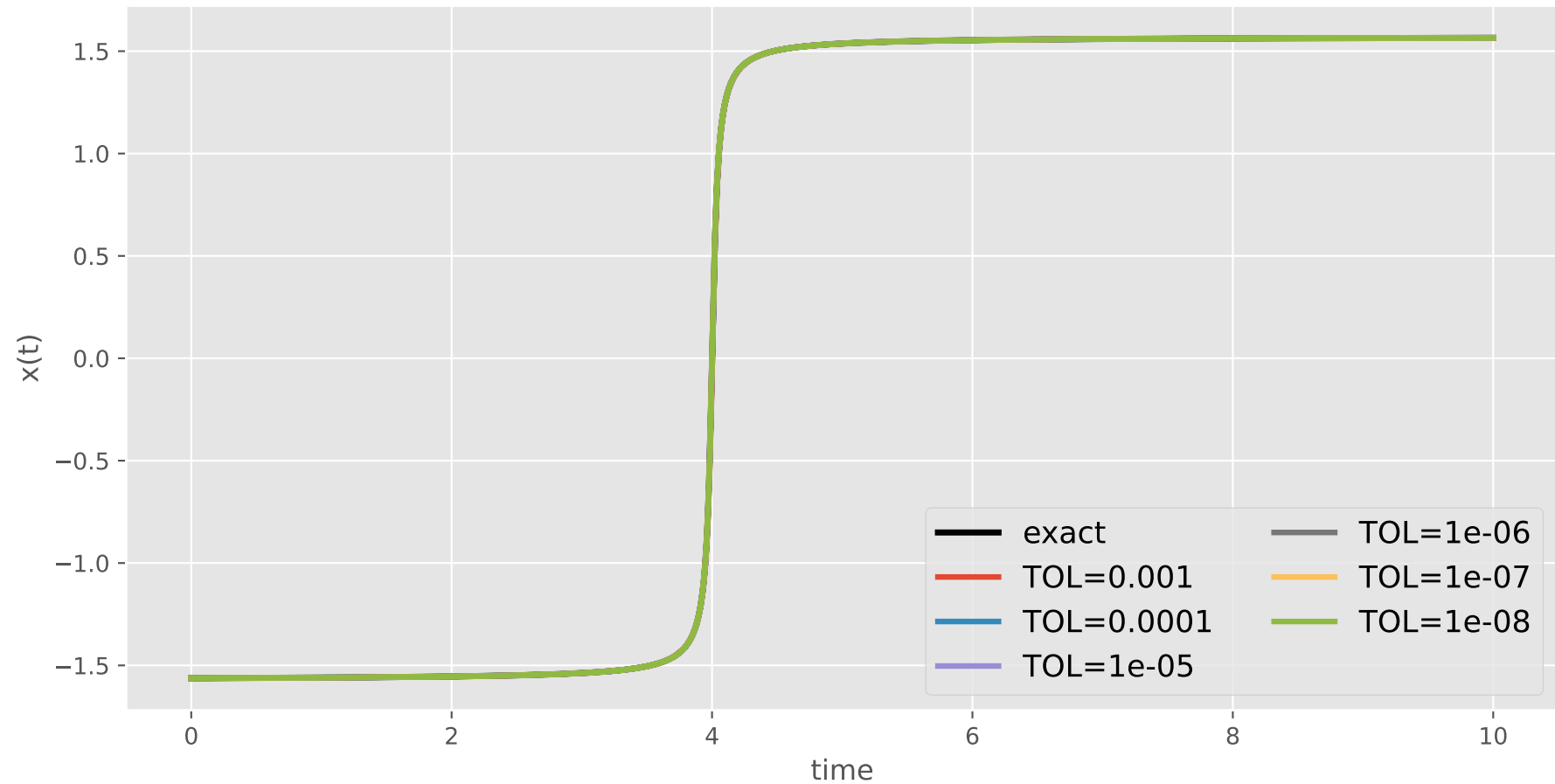
Arctan problem: adaptive BS23 vs references



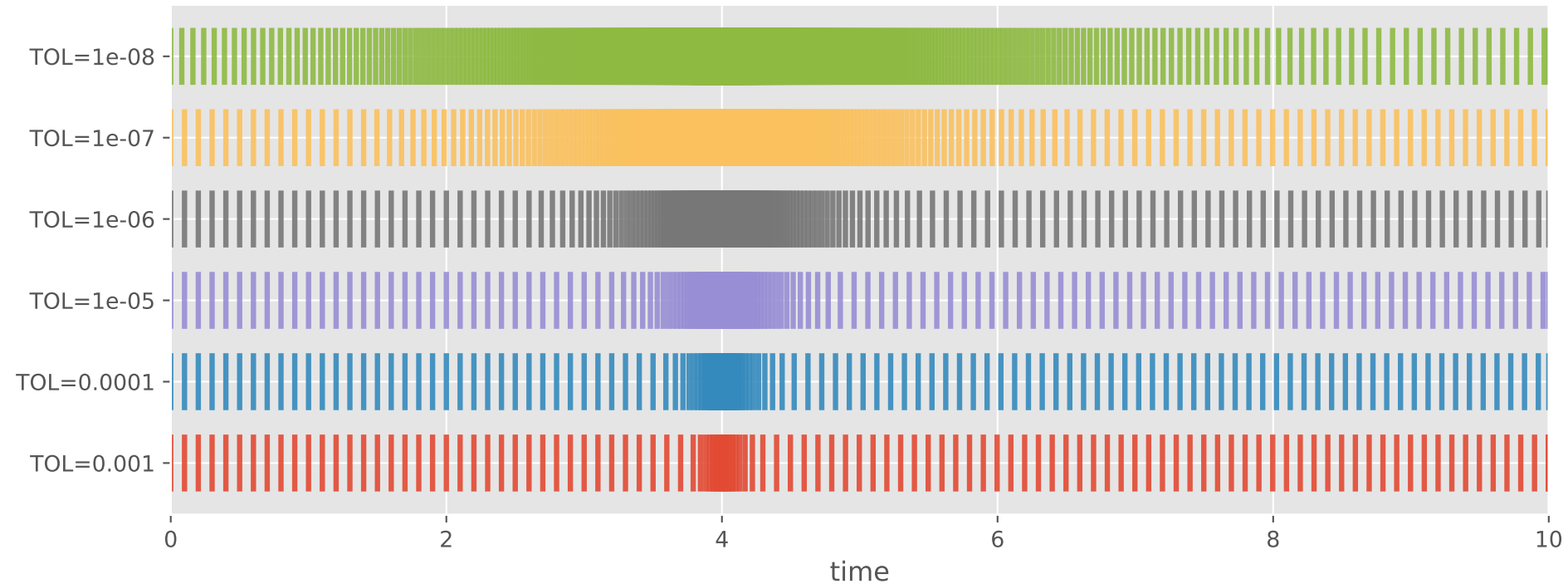
Adaptive discretization points (BS23)



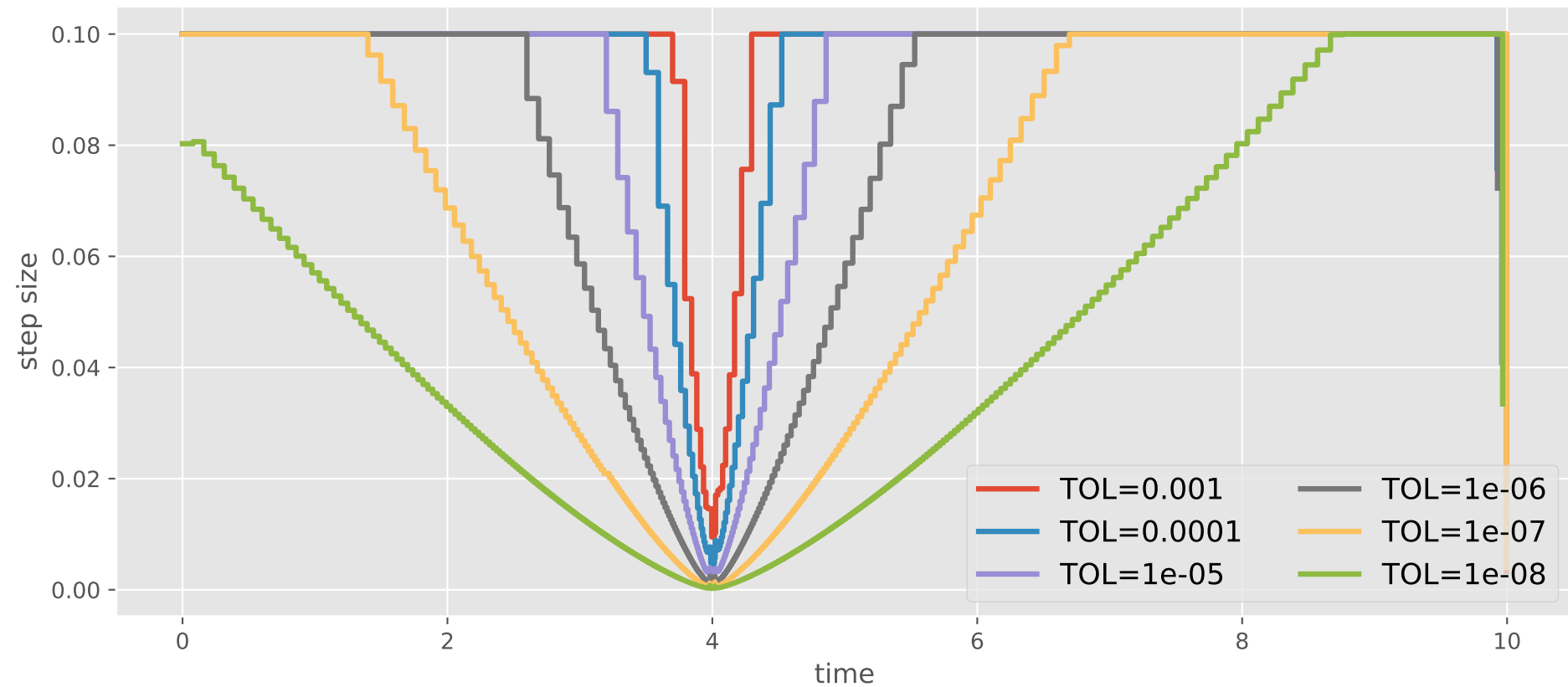
Approximations for various TOL



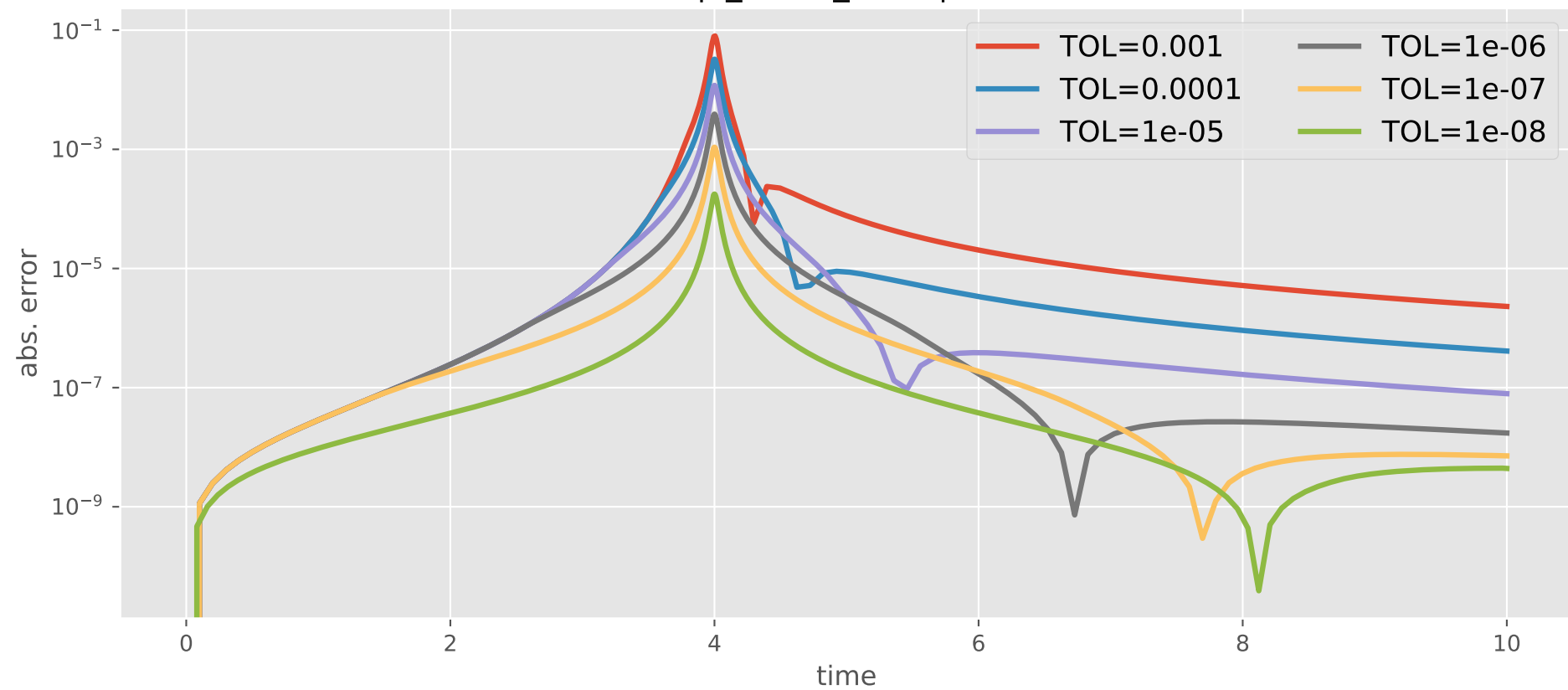
Adaptive grids for different tolerances



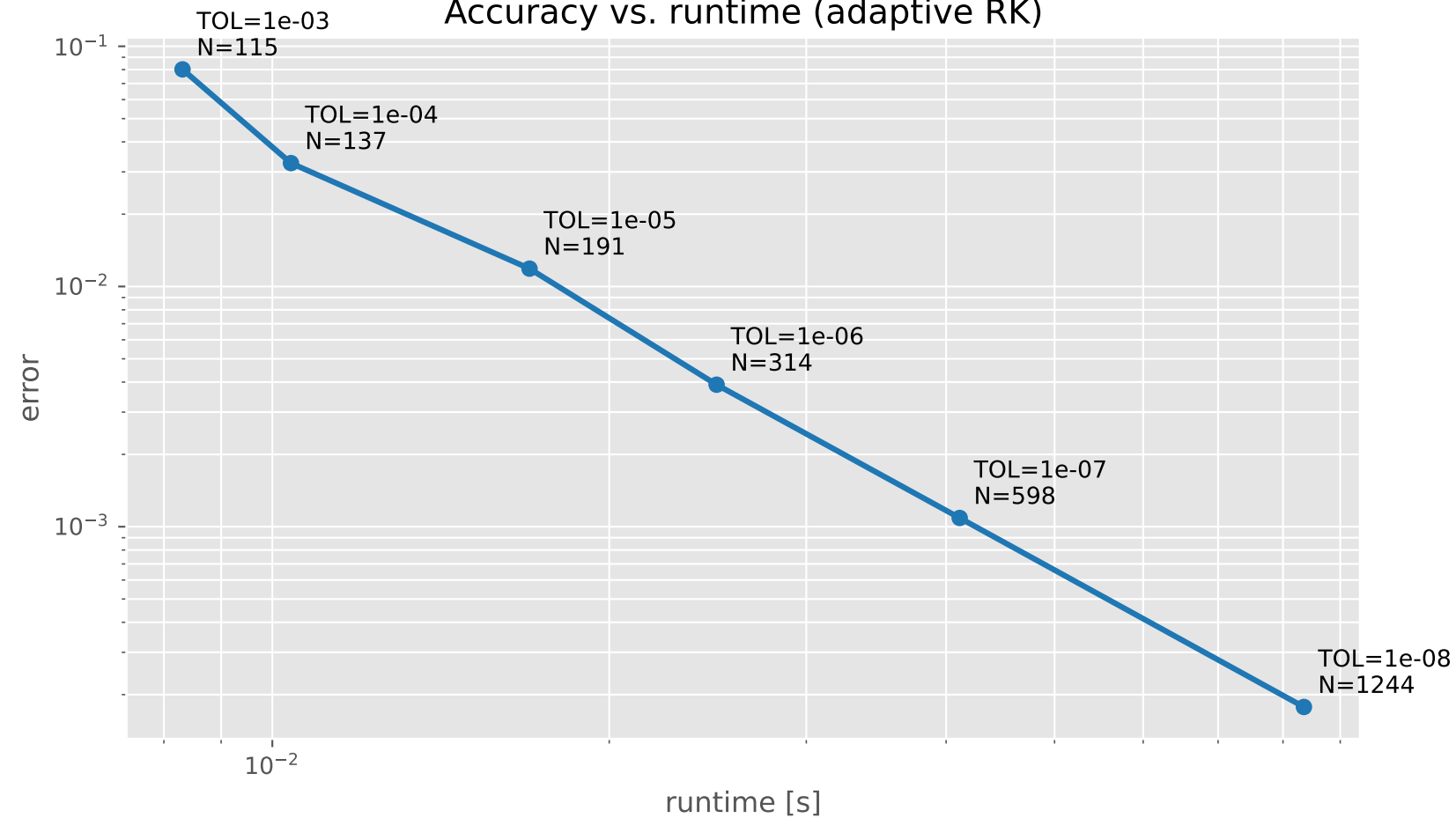
Step sizes over time for different TOL



Grid error  $|x_{ad} - x_{exact}|$  for each TOL



Accuracy vs. runtime (adaptive RK)

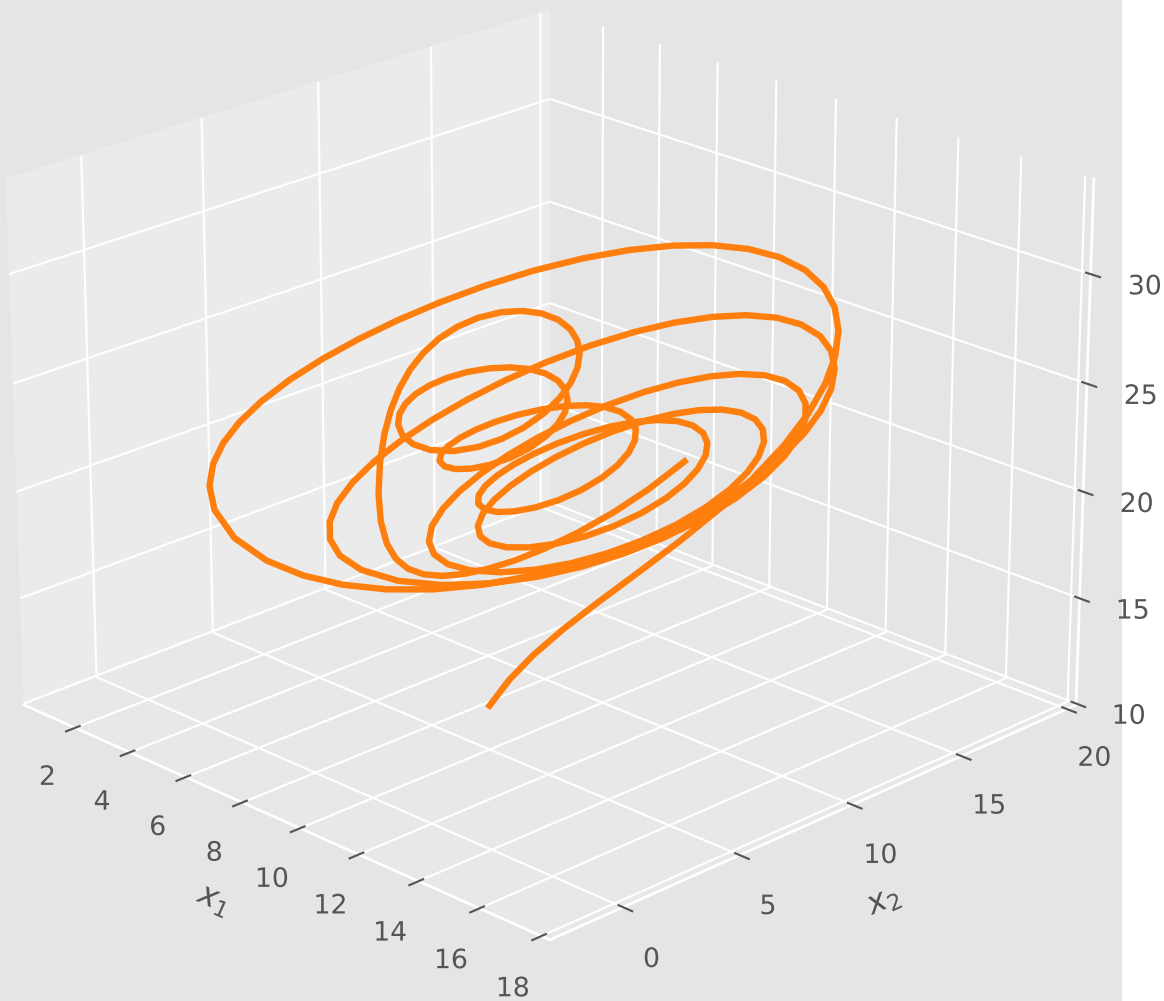


# TOL trade-off metrics (adaptive RK)

TOL	runtime [s]	×	N steps	×	max error	×	final error	×
1e-03	0.008313	×1.00	115	×1.00	8.015e-02	×1.00	2.305e-06	×1.00
1e-04	0.010390	×1.25	137	×1.19	3.264e-02	×0.41	4.114e-07	×0.18
1e-05	0.016975	×2.04	191	×1.66	1.187e-02	×0.15	7.921e-08	×0.03
1e-06	0.024945	×3.00	314	×2.73	3.901e-03	×0.05	1.729e-08	×0.01
1e-07	0.041135	×4.95	598	×5.20	1.088e-03	×0.01	7.149e-09	×0.00
1e-08	0.083519	×10.05	1244	×10.82	1.777e-04	×0.00	4.398e-09	×0.00



Forced Lorenz (adaptive BS23)



Adaptive step sizes (Lorenz)

