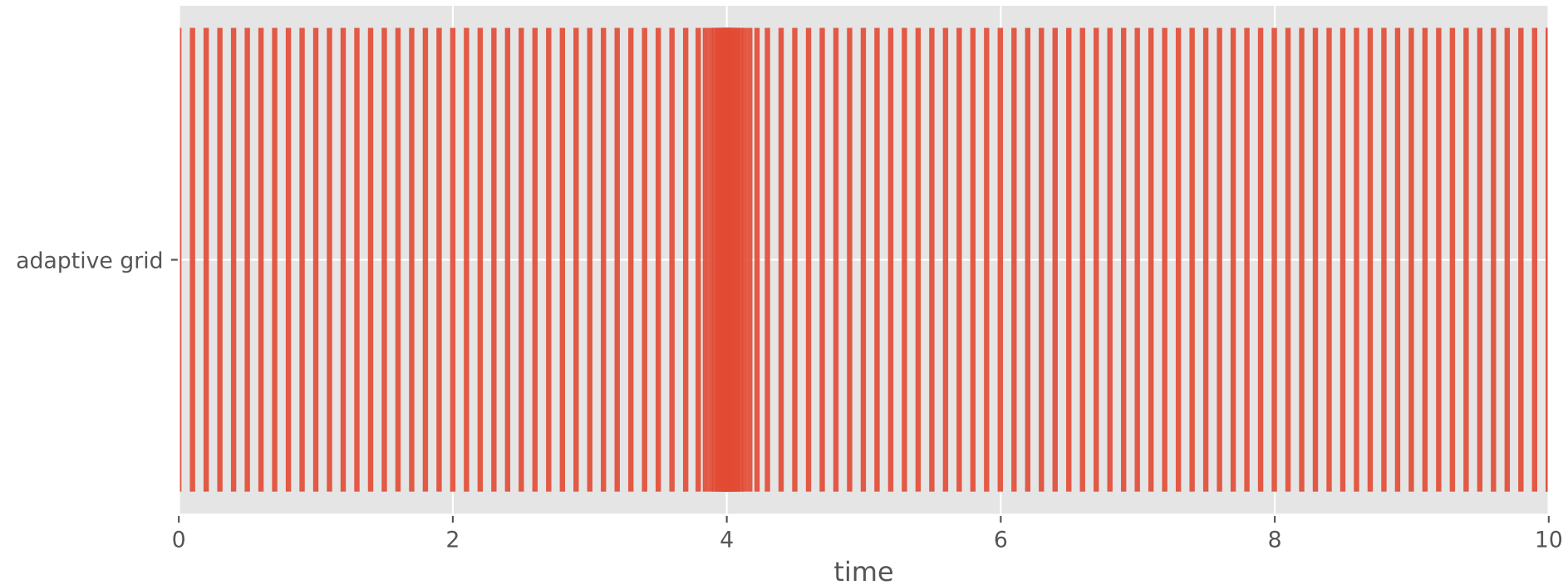


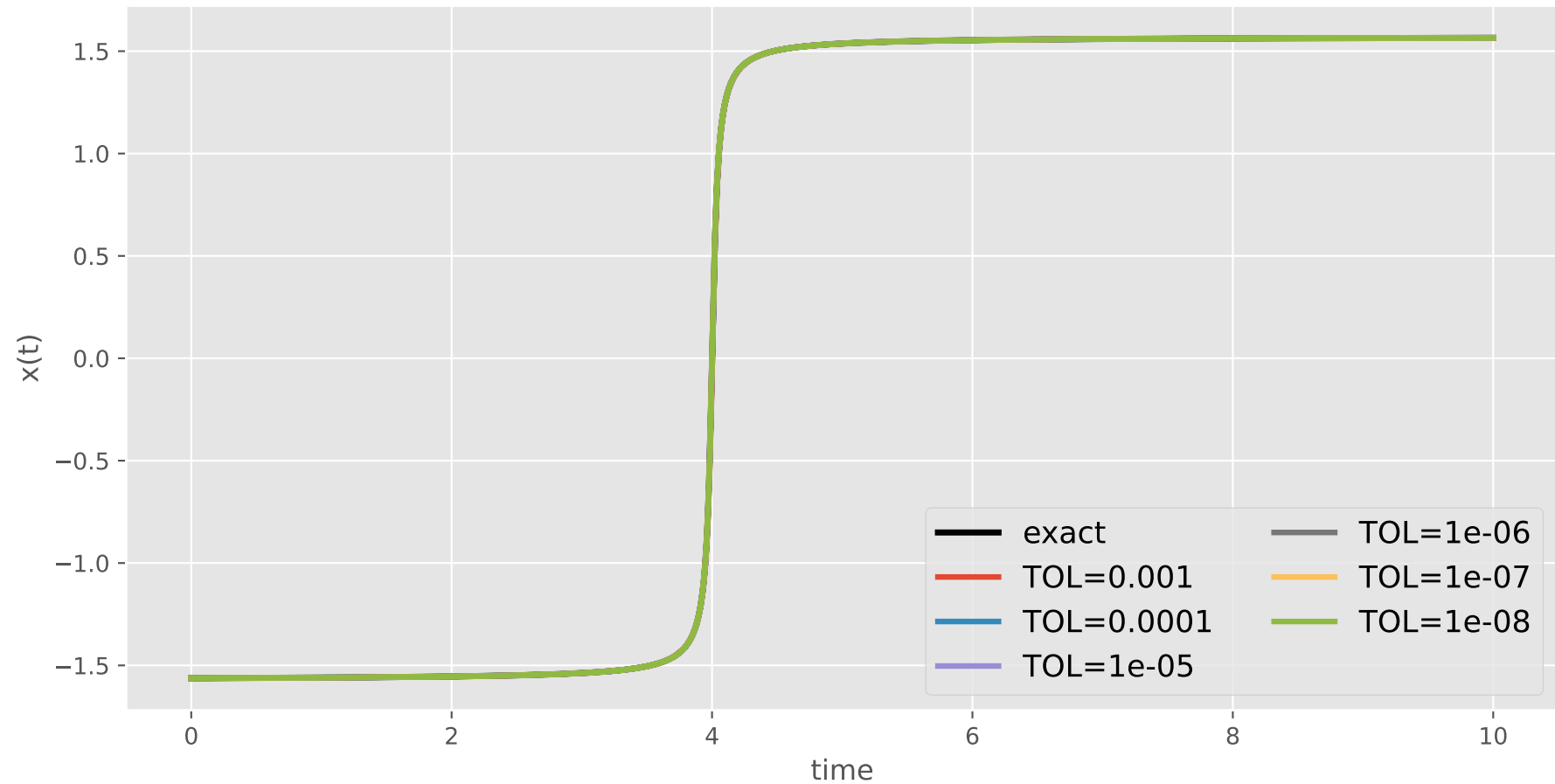
Arctan problem: adaptive BS23 vs references



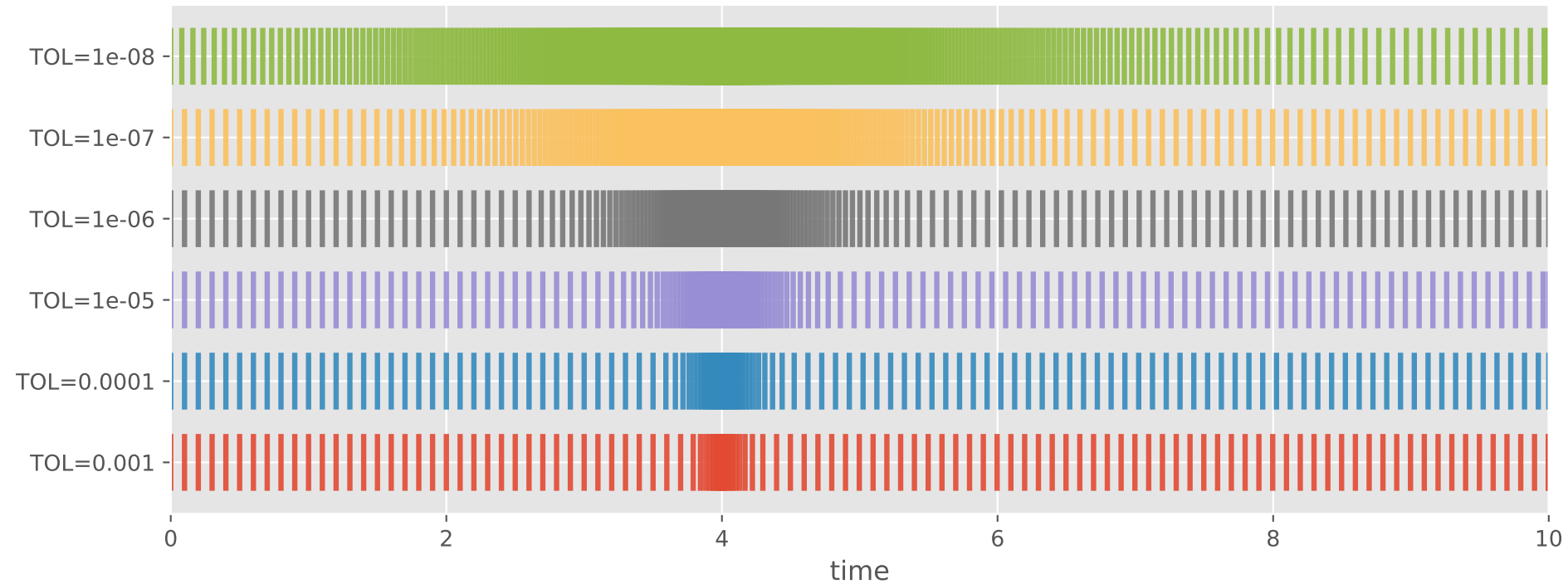
Adaptive discretization points (BS23)



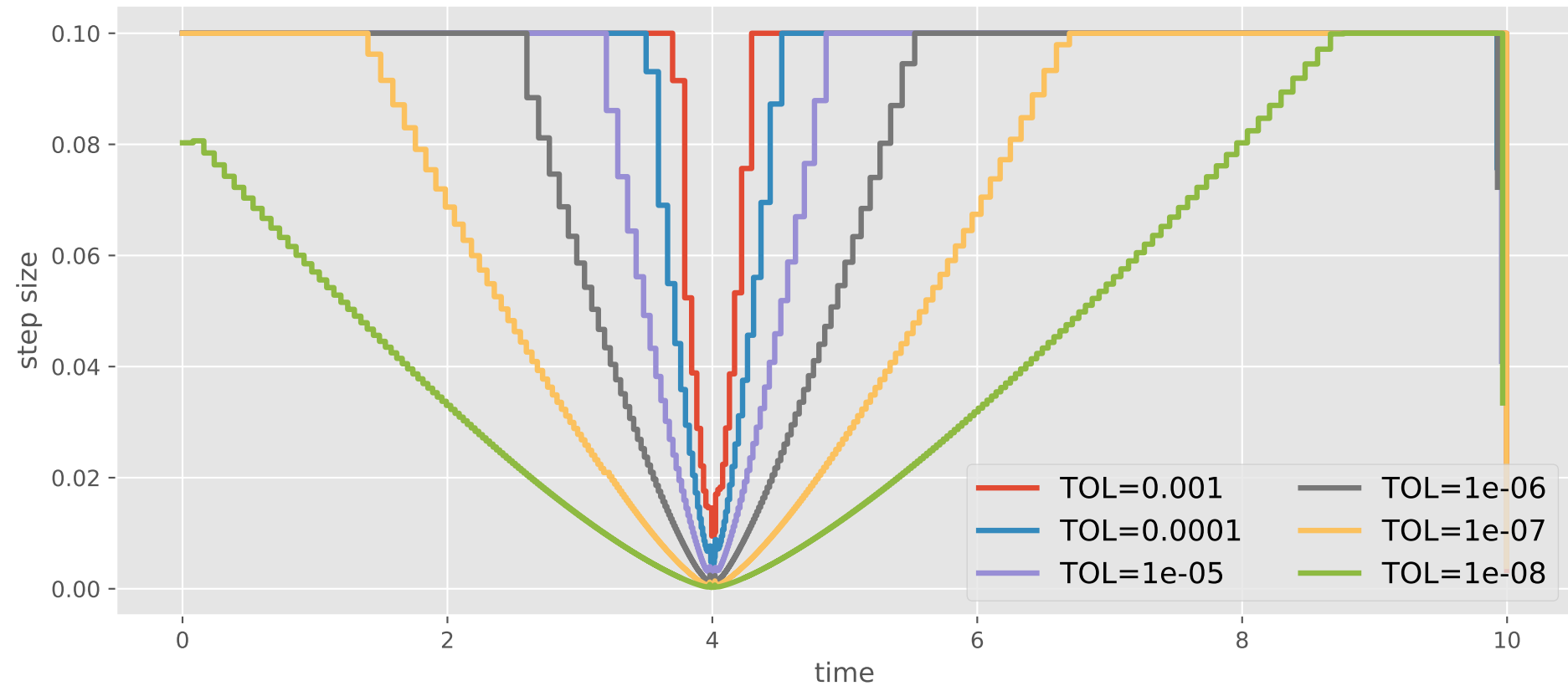
Approximations for various TOL



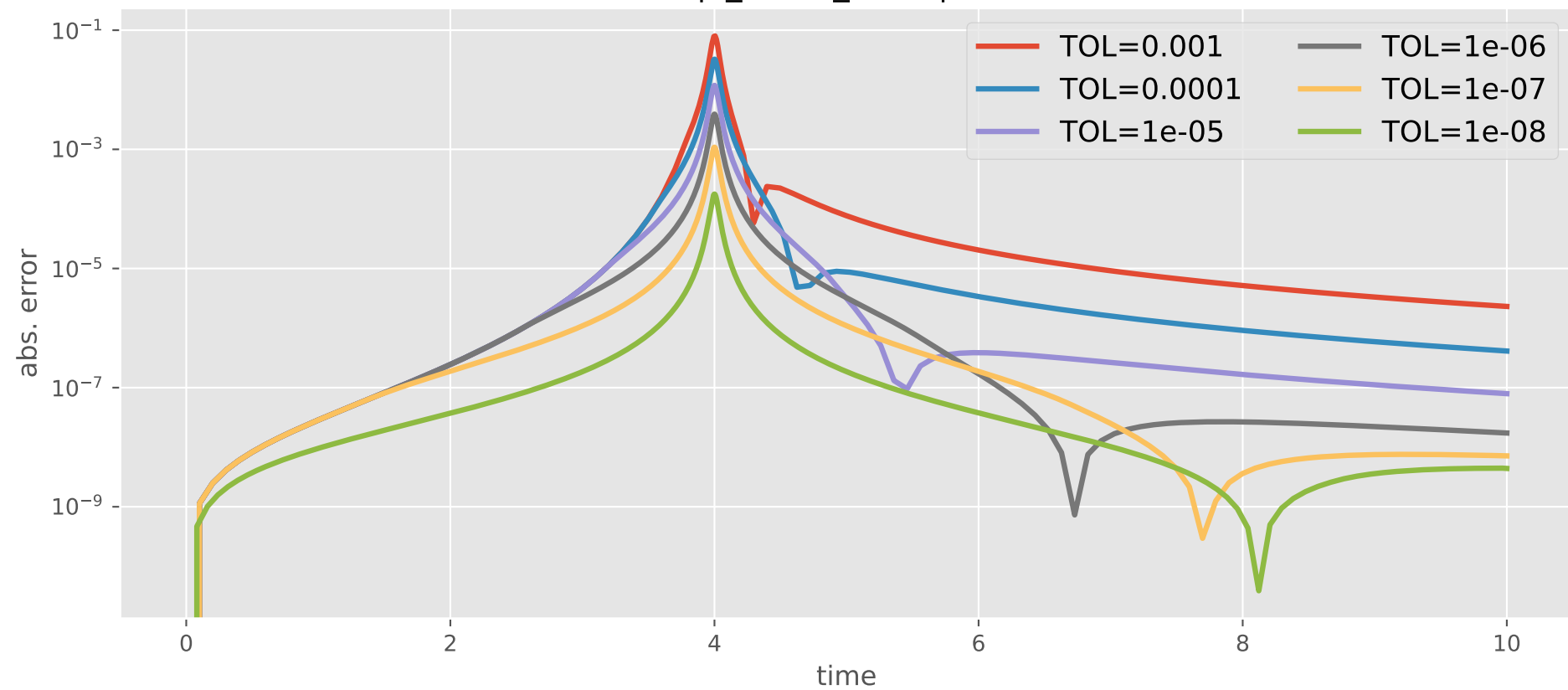
Adaptive grids for different tolerances



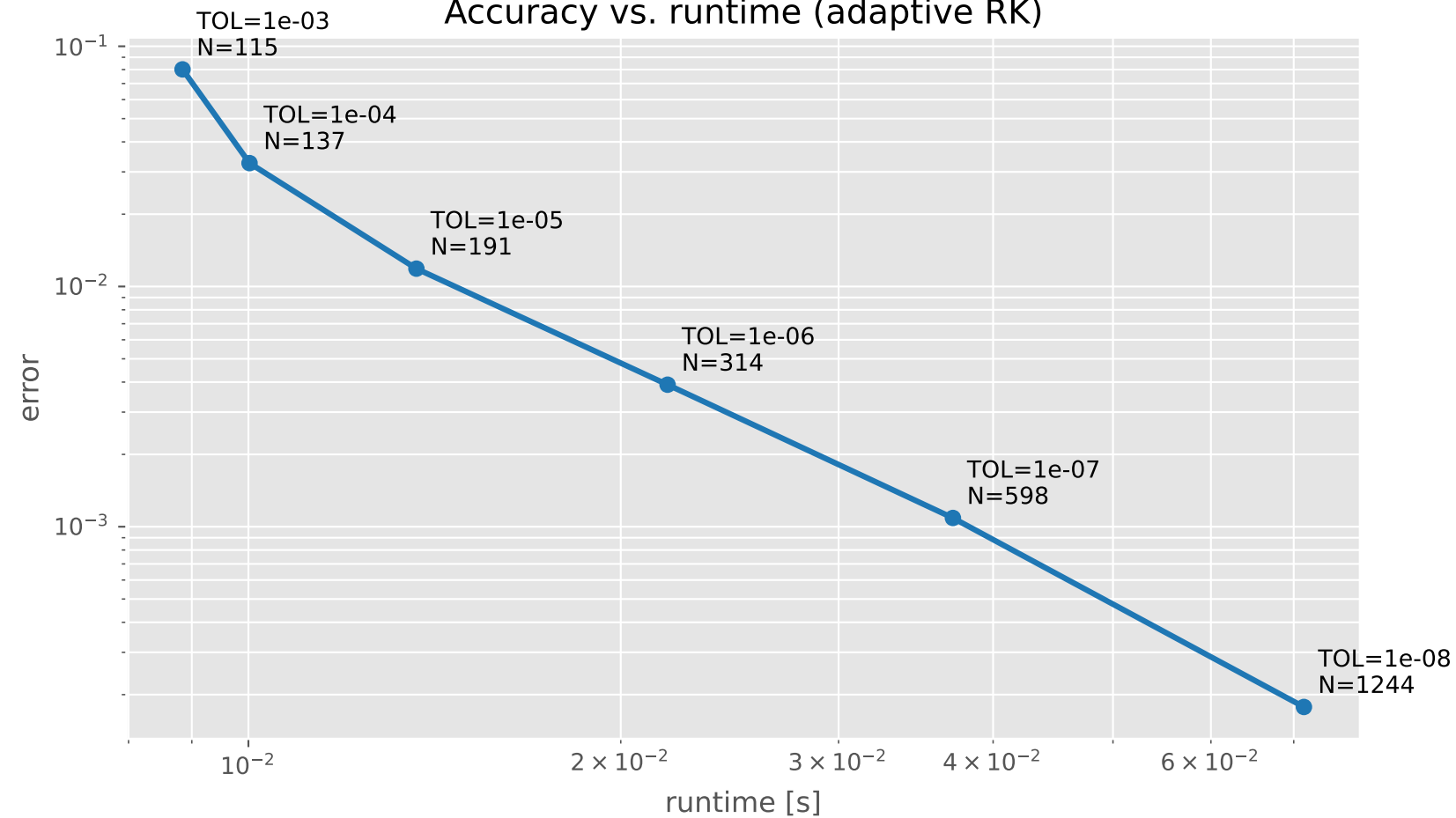
Step sizes over time for different TOL



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



Accuracy vs. runtime (adaptive RK)

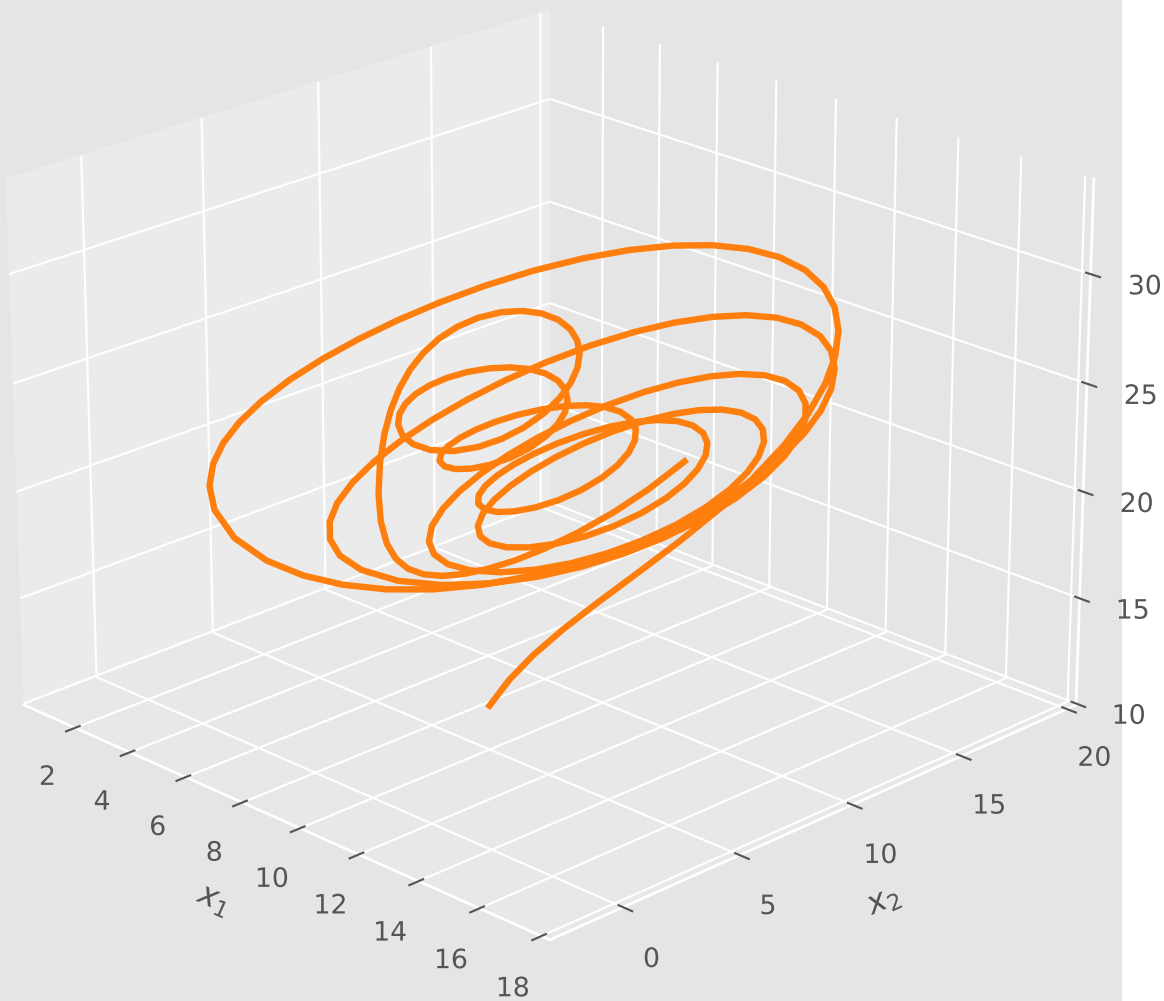


# TOL trade-off metrics (adaptive RK)

TOL	runtime [s]	×	N steps	×	max error	×	final error	×
1e-03	0.008846	×1.00	115	×1.00	8.015e-02	×1.0000	2.305e-06	×1.0000
1e-04	0.010021	×1.13	137	×1.19	3.264e-02	×0.4072	4.114e-07	×0.1785
1e-05	0.013672	×1.55	191	×1.66	1.187e-02	×0.1481	7.921e-08	×0.0344
1e-06	0.021822	×2.47	314	×2.73	3.901e-03	×0.0487	1.729e-08	×0.0075
1e-07	0.037116	×4.20	598	×5.20	1.088e-03	×0.0136	7.149e-09	×0.0031
1e-08	0.071341	×8.07	1244	×10.82	1.777e-04	×0.0022	4.398e-09	×0.0019



Forced Lorenz (adaptive BS23)



Adaptive step sizes (Lorenz)

