

Curved Mesh Generation

	Coarse	Medium	Fine
No. of points	32,841	243,729	1,875,489
No. of boundary points	2,304	8,704	33,792
Support radius	0.06	0.06	0.04
Minimum scaled Jacobian	0.714	0.852	0.926
Wall-clock time	0.68s	12.6s	338s

Summary of 3D bump curved mesh generation

Method	Parameters	Min. scaled Jacobian	Wall clock time	Solver iterations
SLE	$\chi = 2.75$	0.632	19.3s	324
	$\chi = 2.9$	0.632	24.4s	423
	1-step $r_s = 0.04$	0.640	1.86s	365 x 2
RBF	1-step $r_s = 0.08$	0.639	1.9s	1150 x 2
	2-step $r_s = 0.04$	0.641	2.58s	365 x 4

Comparison of RBF (radial basis function) and SLE (stiffened linear elasticity) methods

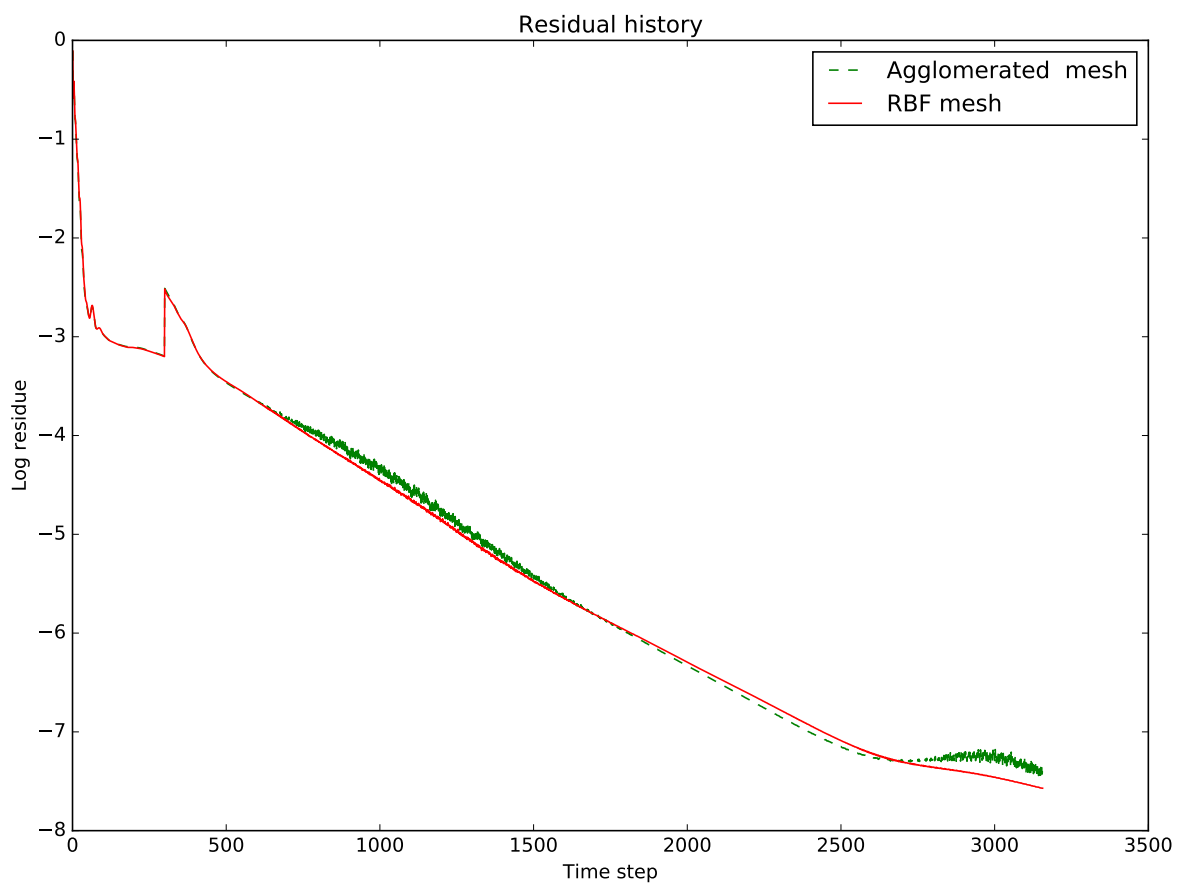


Figure 1: Comparison of residual convergence history with time steps for implicit DG P1 solution