

Capacity→Geometry Testing Coverage – 16 Feb 2026

Nonseparable Laplacian runs: 17 total / 10 passing (criteria A-C).

Coverage by N: N=8: 0/1 pass, N=16: 0/3 pass, N=32: 2/3 pass, N=64: 8/10 pass

Coverage by rewire rate r: r=0.01: 1/4 pass, r=0.02: 1/1 pass, r=0.03: 5/6 pass, r=0.04: 1/1 pass, r=0.05: 1/1 pass

Gap-tail sweeps: 7 epsilon points (rigid for all).

Gap-quantile sweeps: 7 interaction levels; critical transition flagged at q_int=0.02.

Capacity baseline (dimshift) runs: 2 high-res sweeps with threshold localization.

SPX probes: 5 historical shocks × 2 estimator modes with recorded plateau ranges.

D3_N8_r0.01_s42: criteria A, C

D3_N16_r0.01_s42: criteria A

D3_N16_r0.03_s42: criteria A

Nonseparable failures / open items:

D3_N16_r0.05_s42: criteria A, C

D3_N32_r0.01_s42: criteria A

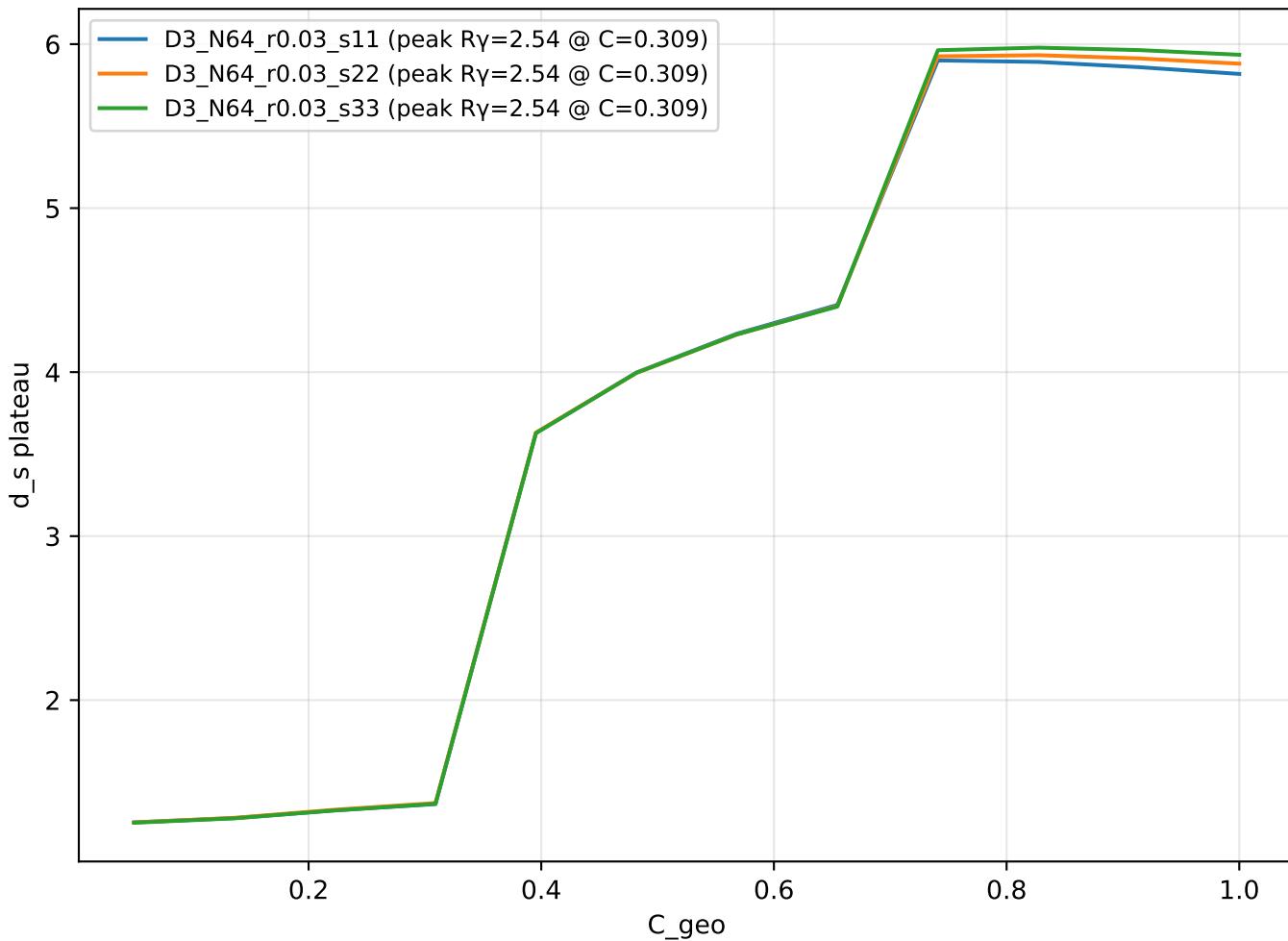
D3_N64_r0.05_s42: criteria A

D3_N64_r0.08_s42: criteria C

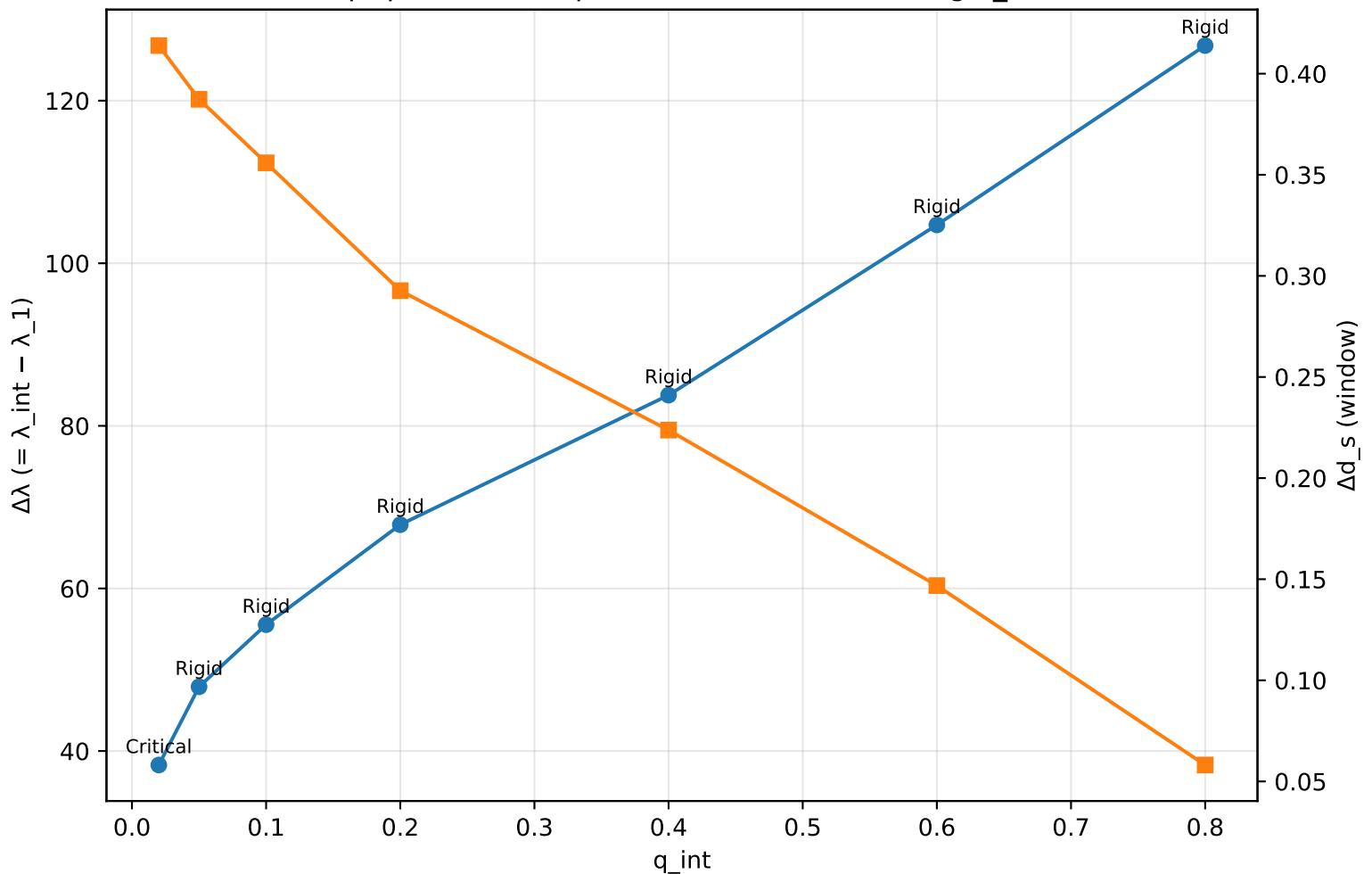
Nonseparable Laplacian coverage (criteria summary)

Run	N	r	seed	d_s range	Status	Issues
D3_N8_r0.01_s	8	0.01	42	0.77-2.51	FAIL	A,C
D3_N16_r0.01	16	0.01	42	1.10-3.36	FAIL	A
D3_N16_r0.03	16	0.03	42	1.21-3.73	FAIL	A
D3_N16_r0.05	16	0.05	42	1.30-4.09	FAIL	A,C
D3_N32_r0.01	32	0.01	42	1.10-3.75	FAIL	A
D3_N32_r0.03	32	0.03	42	1.23-4.69	PASS	—
D3_N32_r0.05	32	0.05	42	1.33-5.62	PASS	—
D3_N64_r0.01	64	0.01	42	1.11-4.20	PASS	—
D3_N64_r0.02	64	0.02	42	1.20-5.34	PASS	—
D3_N64_r0.03	64	0.03	11	1.25-5.90	PASS	—
D3_N64_r0.03	64	0.03	22	1.25-5.93	PASS	—
D3_N64_r0.03	64	0.03	33	1.25-5.98	PASS	—
D3_N64_r0.03	64	0.03	42	1.25-6.20	PASS	—
D3_N64_r0.04	64	0.04	42	1.30-6.81	PASS	—
D3_N64_r0.05	64	0.05	42	1.35-7.33	FAIL	A
D3_N64_r0.06	64	0.06	42	1.40-7.63	PASS	—
D3_N64_r0.08	64	0.08	42	1.49-7.75	FAIL	C

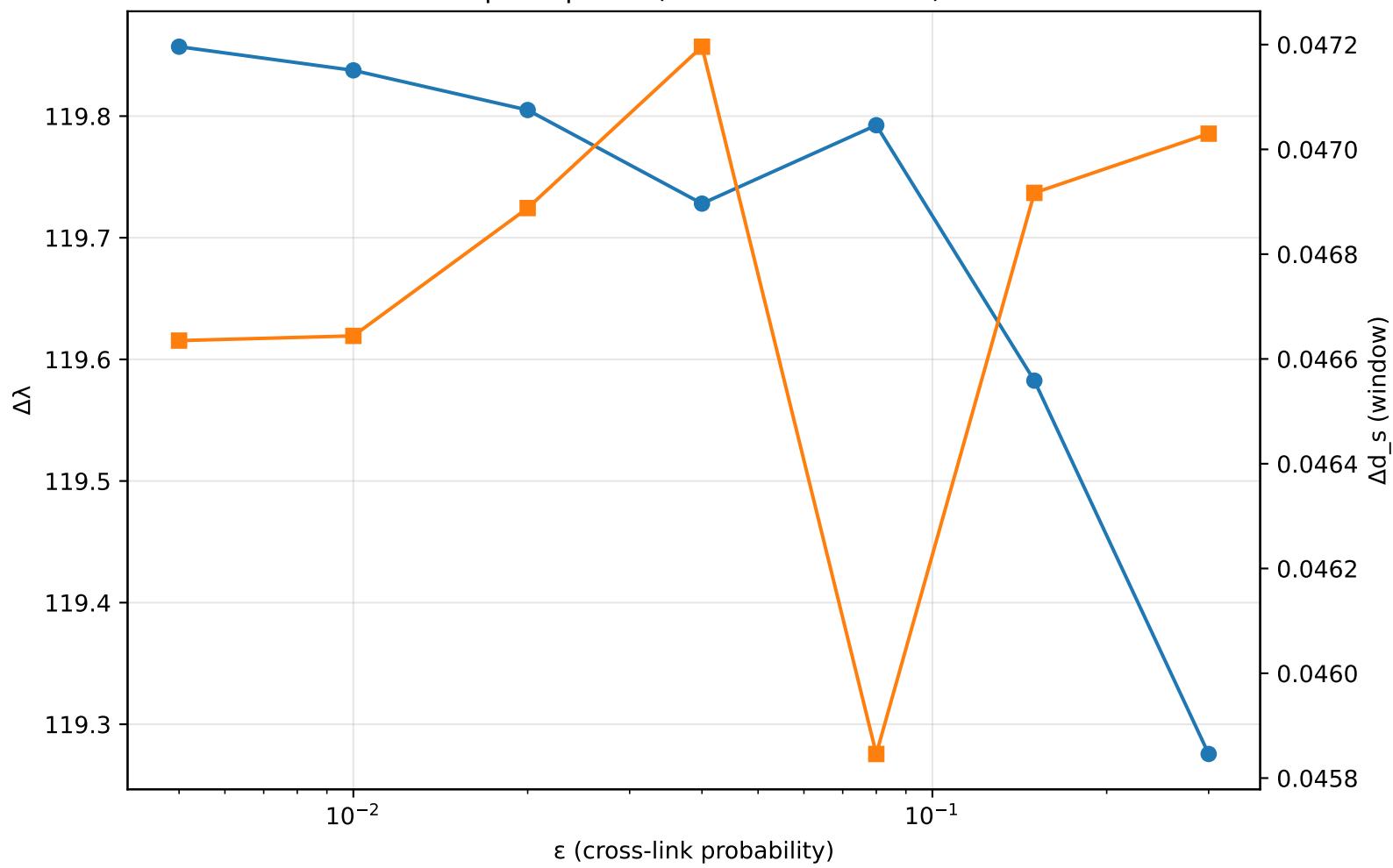
Seed robustness: D=3, N=64, r=0.03



Gap-quantile sweep (fixed substrate, lowering λ_{int})



Gap-tail probe (interaction dilution)



Baseline sweeps and external probes

Capacity dimshift runs:

20260214T184445_c56c1c1e3fdc (D=3, N=64, n_sigma=400, steps=30): d=1.5: C=0.327, d=2.0: C=0.341, d=2.5: C=0.661, d=3.0: C=0.693

20260214T191825_9200c99e0f29 (D=3, N=64, n_sigma=400, steps=30): d=1.5: C=0.327, d=2.0: C=0.341, d=2.5: C=0.661, d=3.0: C=0.693

SPX capacity probes:

Hard estimator

2008-09-15: ds_plateau range [0.48, 0.49] — no crossings

2010-05-07: ds_plateau range [0.88, 0.93] — no crossings

2020-03-16: ds_plateau range [0.68, 0.68] — no crossings

2022-06-13: ds_plateau range [0.00, 0.00] — no crossings

2024-10-04: ds_plateau range [0.90, 1.43] — d_s=1.0 at C=0.067

Soft estimator

2008-09-15: ds_plateau range [0.46, 0.49] — no crossings

2010-05-07: ds_plateau range [0.88, 0.93] — no crossings

2020-03-16: ds_plateau range [0.68, 0.68] — no crossings

2022-06-13: ds_plateau range [0.00, 0.00] — no crossings

2024-10-04: ds_plateau range [1.18, 1.43] — no crossings