

BCQM Stage-3 Robustness Panel

Knee band and clock metastability across conditions (v0.2)

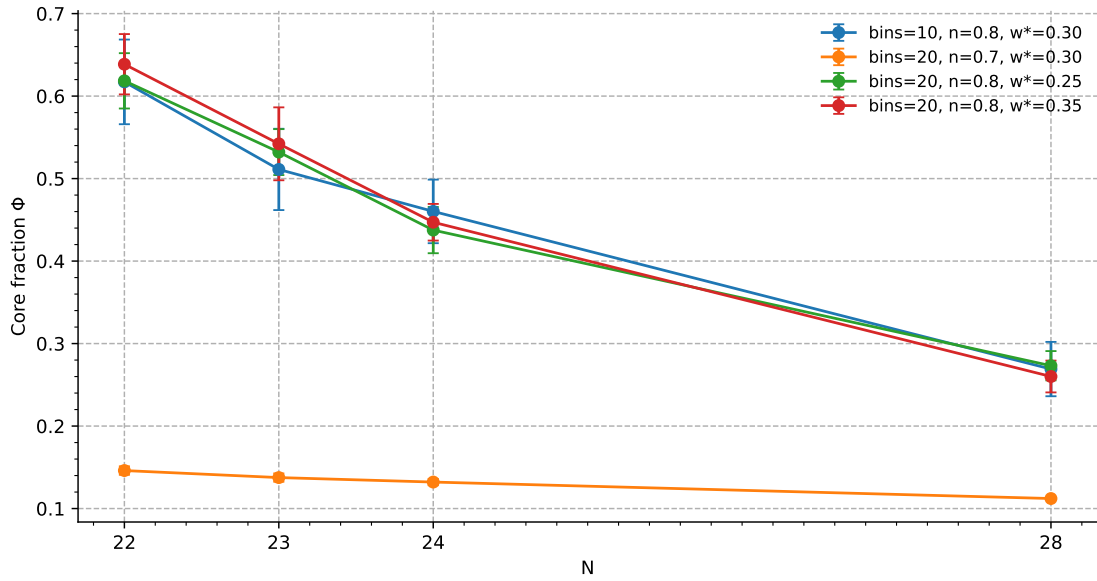
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6 February 2026

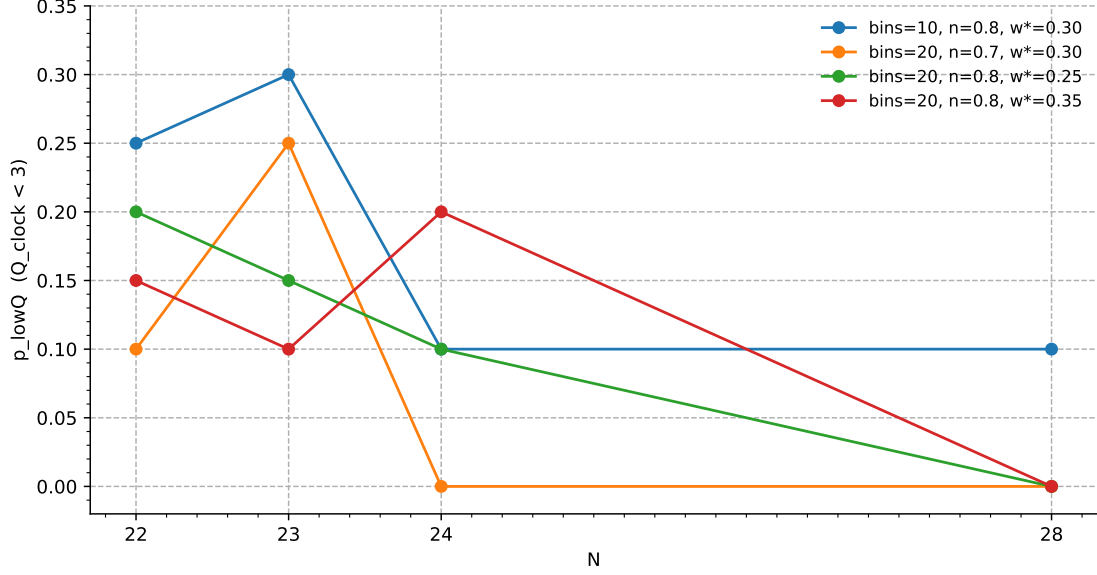
Scope

This one-page panel summarises robustness checks over the knee band $N \in \{22, 23, 24, 28\}$ under four conditions: (i) bins=10 at $n = 0.8, w^{*}=0.30$; (ii) $n = 0.7$ at bins=20, $w^{*}=0.30$; (iii) $w^{*}=0.25$ at bins=20, $n = 0.8$; (iv) $w^{*}=0.35$ at bins=20, $n = 0.8$. Each point uses 20 seeds per N .

Robustness panel: core fraction Φ across conditions



Robustness panel: low-Q probability across conditions



Condition	N	Φ	p_{lowQ}	Q_{high}	d_{L2} mean	d_{L2} p90
bins=10, n=0.8, w*=0.30	22	0.617±0.051	0.25	5.157±0.104	0.0018±0.0011	0.0035
bins=10, n=0.8, w*=0.30	23	0.511±0.049	0.30	5.296±0.112	0.0015±0.0009	0.0029
bins=10, n=0.8, w*=0.30	24	0.460±0.039	0.10	5.372±0.127	0.0019±0.0013	0.0041
bins=10, n=0.8, w*=0.30	28	0.269±0.033	0.10	5.739±0.104	0.0011±0.0007	0.0021
bins=20, n=0.7, w*=0.30	22	0.146±0.005	0.10	5.159±0.138	0.0010±0.0007	0.0020
bins=20, n=0.7, w*=0.30	23	0.138±0.005	0.25	5.327±0.123	0.0006±0.0004	0.0011
bins=20, n=0.7, w*=0.30	24	0.132±0.004	0.00	5.379±0.104	0.0006±0.0003	0.0010
bins=20, n=0.7, w*=0.30	28	0.112±0.000	0.00	5.779±0.140	0.0005±0.0003	0.0009
bins=20, n=0.8, w*=0.25	22	0.619±0.034	0.20	5.027±0.348	0.0009±0.0005	0.0016
bins=20, n=0.8, w*=0.25	23	0.532±0.028	0.15	5.273±0.122	0.0013±0.0008	0.0026
bins=20, n=0.8, w*=0.25	24	0.438±0.028	0.10	5.358±0.115	0.0010±0.0006	0.0018
bins=20, n=0.8, w*=0.25	28	0.273±0.018	0.00	5.799±0.126	0.0010±0.0006	0.0019
bins=20, n=0.8, w*=0.35	22	0.639±0.037	0.15	5.145±0.164	0.0009±0.0006	0.0016
bins=20, n=0.8, w*=0.35	23	0.542±0.044	0.10	5.209±0.112	0.0013±0.0008	0.0024
bins=20, n=0.8, w*=0.35	24	0.447±0.022	0.20	5.364±0.136	0.0011±0.0007	0.0023
bins=20, n=0.8, w*=0.35	28	0.260±0.019	0.00	5.789±0.097	0.0012±0.0015	0.0026

Table 1: Robustness summary for the knee band ($N=22,23,24,28$). p_{lowQ} uses the threshold $Q_{\text{clock}} < 3$. Q_{high} is computed over runs with $Q_{\text{clock}} \geq 3$. Ball-growth stability uses within- N pairwise d_{L2} distances (20 seeds 190 pairs).