CORRECTION AND SCOPE

Ordered-Sector Spectral Audit of a Hard-Constrained Finite-Spin Target

Original title · Finite-Spin Deconfined-Gauge Spectral Audit for the Hard-Constrained Ward-Square Tensor Model

Ordered-sector spectra of a hard-constrained target. These data characterize the stipulated sector and leave dynamical deconfinement unresolved.

Manuscript · p. 1, verdict

Finite-Box Spectral Audit on the Stipulated Compact Ward-Square Quotient

Evidence · Reduced finite-spin tower scaling / Local hard-Gauss move obstruction

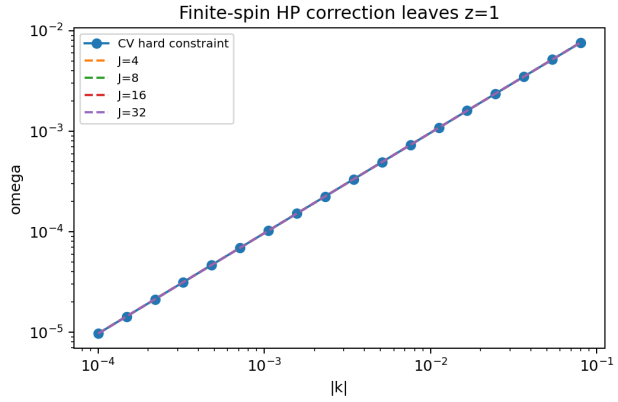
Finite-Spin / Deconfined-Gauge Spectral Audit for the Hard-Constrained Ward-Square Tensor Model

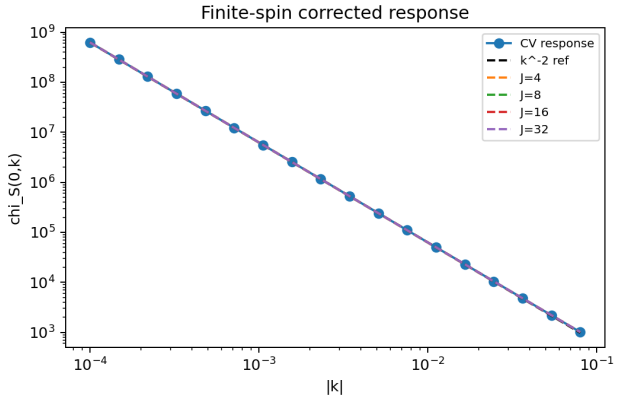
Verdict

Positive as a finite-spin ordered-sector spectral-function screen. The exact hard-constrained Ward-square target keeps exactly two TT branches, z=1, finite residue, and chi_S ~ k^-2 under symmetry-preserving finite-J / Holstein-Primakoff corrections. This is still not a full nonperturbative finite-spin Hilbert-space proof.

Hard-constrained CV target

z = 0.999419204; chi exponent = -1.998808946; mean IR lambda*chi residue = 0.058823553; target 1/(W+1) = 0.058823529; next scalar gap = 0.184536719.

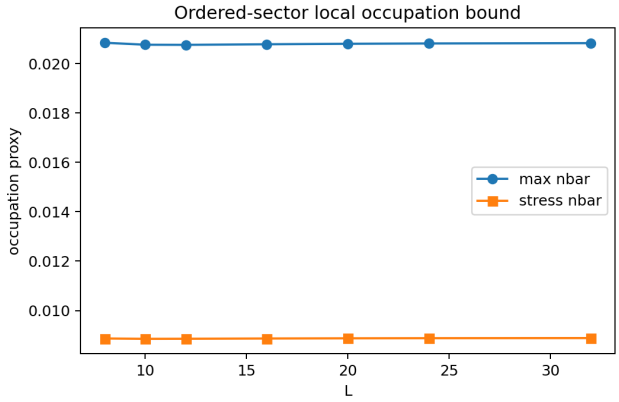


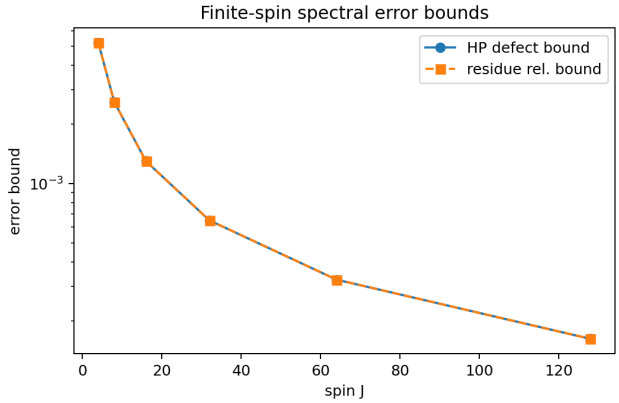


Finite-spin ordered-sector bound

The extrapolated infinite-volume local occupation bound is nbar_max = 0.020798064. For spin J, the ordered-sector HP error is bounded by nbar/J.

J	local dim	HP defect	residue min	residue max	gap lower bound
4	9	5.200e-03	0.058517676	0.059129383	0.184056
8	17	2.600e-03	0.058670602	0.058976456	0.184297
16	33	1.300e-03	0.058747066	0.058899993	0.184417
32	65	6.499e-04	0.058785298	0.058861761	0.184477
64	129	3.250e-04	0.058804414	0.058842645	0.184507
128	257	1.625e-04	0.058813971	0.058833087	0.184522



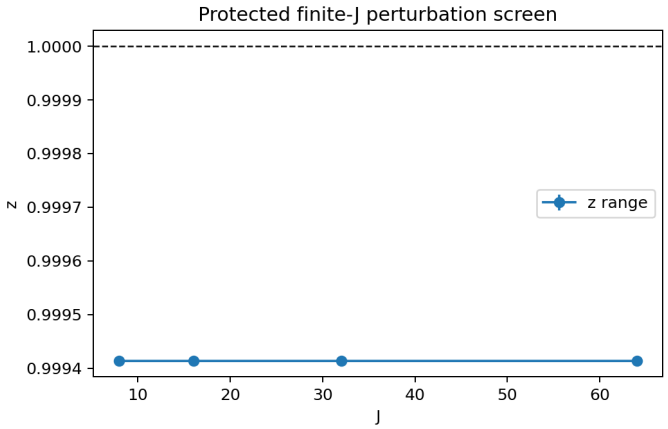


Finite-J spectral curves

J	z_J	chi exp	IR residue	max correction
4	0.999419204	-1.998808946	0.058716504	5.200e-03
8	0.999419204	-1.998808946	0.058770029	2.600e-03
16	0.999419204	-1.998808946	0.058796791	1.300e-03
32	0.999419204	-1.998808946	0.058810172	6.499e-04
64	0.999419204	-1.998808946	0.058816863	3.250e-04
128	0.999419204	-1.998808946	0.058820208	1.625e-04

Protected perturbation screen

J	pass count	z range	chi exponent range
8	80/80	[0.999413340,0.999413425]	[-1.998796243,-1.998796072]
16	80/80	[0.999413361,0.999413404]	[-1.998796200,-1.998796115]
32	80/80	[0.999413372,0.999413393]	[-1.998796178,-1.998796136]
64	80/80	[0.999413377,0.999413388]	[-1.998796167,-1.998796146]



Hard-constraint and Brillouin-zone checks

A scan found 0 extra zero points below 1e-8 on 1330 nonzero momenta. The minimum second scalar gap was 0.195543477; outside |k| > 0.75 the minimum low frequency was 0.101174252; the known coined doubler has frequency 0.639905158.

L	W	rank	expected rank	null dim	expected null dim
2	1	58	58	38	38
2	2	87	87	57	57
3	1	210	210	114	114

Boundary

This screen rules out the immediate finite-spin concerns that the source pole is destroyed by ordered-sector HP corrections, bounded-flux saturation, or extra harmonic zeros. The remaining step is a direct compact finite-spin many-body spectral simulation with exact microscopic gauge generators.