Glueball Spectrum

Improved DLCQ, `hep-lat/9911035`

$K = 8, 10, 13$

$\mathcal{J}^{\mathcal{PC}}$	$\lvert\mathcal{J}_3\rvert^{\mathcal{P}_1}$	c_{on}	c_{off}	$\frac{\mathcal{M}}{\sqrt{\sigma}}$
0^{++}	0^+	1.07	1.07	3.50(24)
2^{++}	2^+	0.86	0.87	4.97(68)
	2^-	Im	–	6.07(?)
	$1^\pm$	0.91, Im	0.72, Im	5.62(?)
	0^+	0.99	0.98	4.97(18)
1^{+-}	$1^\pm$	0.88, 1.06	0.94, 1.00	5.37(36)
	0^-	1.07	1.07	5.74(45)

DLCQ with periodic boundary conditions

$K = 10, 12, 15$

$\mathcal{J}^{\mathcal{PC}}$	$\lvert\mathcal{J}_3\rvert^{\mathcal{P}_1}$	c_{on}	c_{off}	$\frac{\mathcal{M}}{\sqrt{\sigma}}$
0^{++}	0^+	1.02	1.02	3.51
2^{++}	2^+	0.96	0.93	5.31
	2^-	Im	–	6.18
	$1^\pm$	–, Im	0.99, Im	5.83
	0^+	0.89	0.92	5.38
1^{+-}	$1^\pm$	0.54, 1.06	0.84, 0.80	5.48
	0^-	0.97	1.00	6.04

The glueball multiplet components at the lowest overall χ^2, showing masses $\mathcal{M}$ and c from the dispersion relation. "Im" indicates $c^2 < 0$ and "–" indicates the quantity has not been measured. The $\mathcal{J}_3 = \pm 1$ states are exactly degenerate.