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

$K = 6, 7, 9$

$\mathcal{J}^{\mathcal{PC}}$	$\lvert\mathcal{J}_3\rvert^{\mathcal{P}_1}$	c_{on}	c_{off}	$\frac{\mathcal{M}}{\sqrt{\sigma}}$
0^{++}	0^+	1.06	1.06	3.98
2^{++}	2^+	0.93	0.94	4.79
	2^-	Im	–	5.86
	$1^\pm$	1.07, Im	0.83, Im	5.56
	0^+	1.06	1.06	3.98
1^{+-}	$1^\pm$	0.51, 0.98	0.59, 0.86	5.36
	0^-	Im	Im	5.99

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.