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Comparing meson-meson and diquark-antidiquark creation operators for a bar-b bar-b u d tetraquark

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We compare two frequently discussed competing structures for a stable $\bar{b}\bar{b}ud$ tetraquark with quantum numbers $I(J^P) = 0(1^+)$ by considering meson-meson as well as diquark-antidiquark creation operators. We treat the heavy antiquarks as static with fixed positions and find diquark-antidiquark dominance for $\bar{b}\bar{b}$ separations $r < 0.25\,\mathrm{fm}$, while for $r > 0.50\,\mathrm{fm}$ the system essentially corresponds to a pair of B mesons. For the meson-meson to diquark-antidiquark ratio of the tetraquark we obtain around $60\%/40\%$.

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