

$$\langle J^z \rangle = \frac{1}{2} \left(S_q^z = \frac{1}{2}, L^z = 0 \right) + \frac{1}{2} \left(S_q^z = -\frac{1}{2}, L^z = 1 \right) = \langle L^z \rangle = \frac{1}{2}$$