Hybrid state of $J^{\pi} = 1/2^{+}$

$$C_{\mu\nu}(W) = \int_0^{\pi} \frac{(2J+1)}{2} \frac{d\sigma_u}{d(-\cos\theta_K)} d^{1/2}_{\mu\nu}(\cos\theta_K) \sin\theta_K d\theta_K$$

$$\mu = \pm 1/2 , \quad \nu = \pm 1/2$$

$$C(W) = \sum_{\mu,\nu} C_{\mu\nu}(W)$$

Hybrid state of $J^{\pi} = 3/2^{+}$

$$C_{\mu\nu}(W) = \int_0^{\pi} \frac{(2J+1)}{2} \frac{d\sigma_u}{d(-\cos\theta_K)} d^{3/2}_{\mu\nu}(\cos\theta_K) \sin\theta_K d\theta_K$$

$$\mu = \pm 3/2, \pm 1/2 , \quad \nu = \pm 3/2, \pm 1/2$$

$$C(W) = \sum_{\mu,\nu} C_{\mu\nu}(W)$$