$$C_{AB}^{\mathrm{DHK}}(t) = \int \mathrm{d}\Omega_0 \int \mathrm{d}\Omega_0' \underbrace{\left\langle \Omega_0 \middle| \hat{A} \middle| \Omega_0' \right\rangle}_{A\, e^{i\phi_A}} \underbrace{\left\langle \Omega_t' \middle| \hat{B} \middle| \Omega_t \right\rangle}_{B\, e^{i\phi_B}} \underbrace{\mathcal{C}_t^{\mathrm{HK}} \mathcal{C}_{t'}^{\mathrm{HK}\,*}}_{C\, e^{i\phi_C}} e^{i\Delta S}$$

$$C_{AB}^{\mathrm{DHK}}(t) = \int \mathrm{d}\Omega_0 \int \mathrm{d}\Omega_0' \underbrace{\left\langle \Omega_0 \middle| \hat{A} \middle| \Omega_0' \right\rangle}_{A\, e^{i\phi_A}} \underbrace{\left\langle \Omega_t' \middle| \hat{B} \middle| \Omega_t \right\rangle}_{B\, e^{i\phi_B}} \underbrace{\mathcal{C}_t^{\mathrm{HK}} \mathcal{C}_{t'}^{\mathrm{HK}\,*}}_{C\, e^{i\phi_C}} e^{\frac{i}{\hbar}\Delta S}$$

Focus on amplitude (ignore all phases)