

$$\begin{aligned}\mathrm{Re}[U^{\mu\nu}(\mathbf{p}, q)] &= \mathrm{Re} \left[ \int_{-\infty}^{\infty} d\tau \, R^{\mu\nu}(\tau; \mathbf{p}, \mathbf{q}) e^{-iq_4\tau} \right] \\ &\propto \int_0^{\infty} d\tau \, [R^{\mu\nu}(\tau; \mathbf{p}, \mathbf{q}) - R^{\mu\nu}(-\tau; \mathbf{p}, \mathbf{q})] \sin(q_4\tau)\end{aligned}$$