

$$\frac{M_{pa}}{2} h_{ij}(\tau, \vec{x}) = \int \frac{d^3 k}{(2\pi)^{3/2}} e^{i\vec{k} \cdot \vec{x}} \sum_{\lambda=\pm} \Pi_{ij,\lambda}(\hat{k}) \hat{h}_{\lambda}(\tau, \vec{k}) \quad , \quad \Pi_{ij,\lambda}(\hat{k}) = \epsilon_i^{(\lambda)}(\hat{k}) \epsilon_j^{(\lambda)}(\hat{k}),$$