

$$\mathcal{K}_{\text{ph};1234;\sigma\sigma'}^{(1);q} =$$

The diagram illustrates the kernel  $\mathcal{K}_{\text{ph};1234;\sigma\sigma'}^{(1);q}$ . It features an incoming fermion pair on the left with momenta  $q$  and spins  $\sigma, 1$  and  $\sigma, 2$ . These lines meet at a vertex, from which a wavy line (representing a photon or gluon) with momentum  $q$  and spin  $\sigma_1$  extends to a central box. The box is labeled  $\chi_{\text{ph};ba\partial c}^q$  and contains the spins  $\sigma_1, \sigma_2$ . A second wavy line, also with momentum  $q$  and spin  $\sigma_1$ , connects the box to another vertex. From this second vertex, an outgoing fermion pair with momenta  $q$  and spins  $\sigma', 3$  and  $\sigma', 4$  emerges.