

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

The diagram illustrates the kernel  $\mathcal{K}_{\text{ph};1234;\sigma\sigma'}^{(1);q}$  as a sequence of three interaction vertices:

- Vertex 1 (Left):** A circle containing  $\mathcal{U}_{\text{ph};12ab}^{q(-k_1)}$ . It has two incoming lines labeled  $\sigma;1$  and  $\sigma;2$ , and one outgoing line labeled  $\sigma\sigma_1$ .
- Vertex 2 (Middle):** A square containing  $\chi_{\text{ph};badc}^{qk_1k_2}$ . It has two incoming lines labeled  $\sigma\sigma_1$  and  $\sigma\sigma_2$ , and one outgoing line labeled  $\sigma\sigma'$ .
- Vertex 3 (Right):** A circle containing  $\mathcal{U}_{\text{ph};c d 34}^{qk_2}$ . It has one incoming line labeled  $\sigma\sigma'$  and two outgoing lines labeled  $\sigma';4$  and  $\sigma';3$ .

The lines are connected sequentially:  $\sigma;1$  and  $\sigma;2$  enter the first vertex,  $\sigma\sigma_1$  and  $\sigma\sigma_2$  enter the second vertex, and  $\sigma\sigma'$  enters the third vertex. The final outgoing lines are  $\sigma';4$  and  $\sigma';3$ .