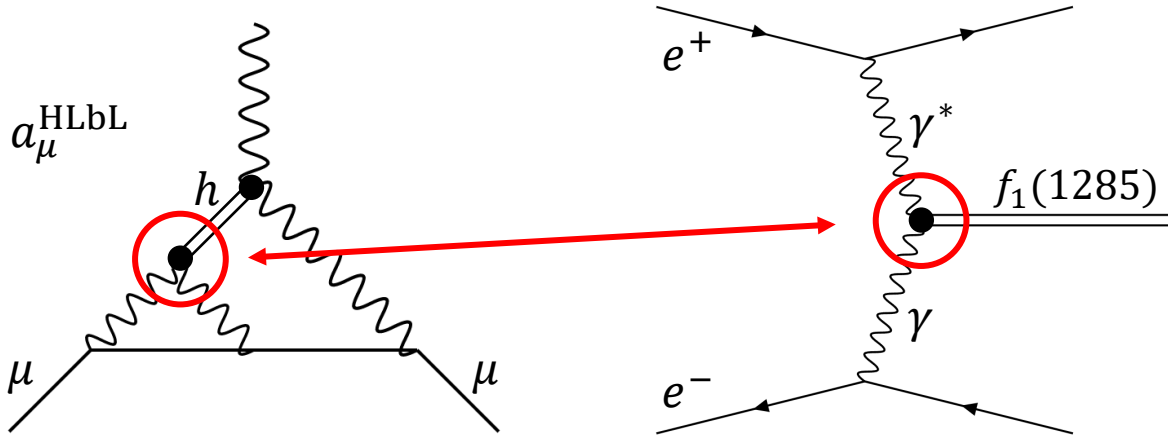
Measurement of the Process $\gamma\gamma^* \to f_1(1285)$ at BESIII

- Axial-vector mesons have the largest relative uncertainty in a_μ^{HLbL}
- Transition form factor measurements of two-photon coupling to hadrons needed
- Process $\gamma\gamma^* \to f_1(1285) \to \pi^+\pi^-\eta$ is investigated with largest BESIII data set



HLbL Contributions to a_μ^{SM}

Contribution	$a_\mu^{\mathrm{HLbL}} \times 10^{11}$
π^0, η, η'-poles	93.8 ± 4.0
π, K-loops/boxes	-16.4 ± 0.2
S-wave $\pi\pi$ rescattering	-8 ± 1
Scalars & tensors	-1 ± 3
Axial vectors	6 ± 6
u, d, s-loops / short distance	15 ± 10
c-loop	3 ± 1
Total	92 ± 19

Phys.Rept. 887 (2020) 1-166

- Cross-section σ split into two terms due to polarization of the photons: Longitudinal (L) or Transversal (T)
- Use helicity angle to separate σ_{TL} and σ_{TT} in bins of momentum transfer Q^2