The real component of the interference (a) is odd around the Higgs boson mass, with a sharp spike but long tails. Smearing this shape with the experimental resolution broadens observed cross section (b), and adding this to the nominal signal model (c) leads to a shift in the apparent mass.

In the SM, this shift was originally estimated using a simplified resolution model to be approximately 80 MeV \([\text{GeV}]\). In this analysis, which use a more sophisticated resolution model and slightly adjusted selection, the shifts come out a bit smaller (about 50 MeV for the SM). The size of this shift decreases at large transverse momentum of the Higgs boson decay system, which means that the total Higgs boson width is reflected in the di-muon mass distribution, the shifts come out a bit smaller (about 50 MeV for the SM). The size of this shift decreases at large transverse momentum of the Higgs boson decay system, which means that the total Higgs boson width is reflected in the di-muon mass distribution.