Mass and width of the sigma meson from $\phi \to \pi^0\pi^0\gamma$ decay

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We use the high precision data on the energy spectrum in $\phi \to \pi^0\pi^0\gamma$ obtained by KLOE Coll. at DAϕNE [1] to extract the mass and width of the elusive sigma meson. For such a purpose we use the formalism developed in [2] which improves $\mathcal{O}(p^4)$ predictions of chiral perturbation theory for these processes by explicitly including scalar resonant effects.

References

[1] A. Alosio et al. [KLOE Coll.] ArXiv:hep-ex/0204013.
[2] A. Bramon, R. Escribano, J.L Lucio, M. Napsuciale and G. Pancheri, Phys. Lett. **B494** (2000)221; **B517**(2001)345; ArXiv: hep-ph/0204339, submitted to Eur. Phys. Jour..