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Revising the f1(1420) resonance

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We have studied the production and decay of the f1(1285) into πa0(980) and KK^- *as a function of the mass of the resonance and find a shoulder around 1400 MeV, tied to a triangle singularity, for the πa0(980) mode, and a peak around 1420 MeV with about 60 MeV width for the* KK^- mode. Both these features agree with the experimental information on which the f1(1420) resonance is based.
In addition, we find that if the f1(1420) is a genuine resonance, coupling mostly to KK^- *as seen experimentally, one finds unavoidably about a 20% fraction for πa0(980) decay of this resonance, in drastic contradiction with all experiments. Altogether, we conclude that the f1(1420) is not a genuine resonance, but the manifestation of the πa0(980) and* KK^- decay modes of the f1(1285) at higher energies than the nominal one.

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