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# Behaviour S-wave poles near threshold and Scalar Meson nonet below 1 GeV

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## Abstract

We describe the behaviour at threshold of S-wave poles of the scattering matrix within a four-parameter model for non-exotic meson-meson scattering, which accommodates all non-exotic mesons, hence also the light scalar mesons, as resonances and bound states characterised by complex singularities of the scattering amplitude as a function of the total invariant mass.

The majority of the full  $S$ -matrix mesonic poles stem from an underlying confinement spectrum. However, the light scalar mesons  $K_0^*(830)$ ,  $a_0(980)$ ,  $f_0(400-1200)$ , and  $f_0(980)$  do not, but instead originate in  ${}^3P_0$ -barrier semi-bound states. We show that the behaviour of the corresponding poles is identical at threshold.

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