ON THE ANALYTIC EXTRAPOLATION
OF SCATTERING AMPLITUDES IN L^2 NORM

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Abstract: The problem of the analytic extrapolation of scattering amplitudes to interior points from a least-squares error channel is studied and found to be stable if some $\tilde{L}^2$ norm of the amplitude on the remainder of the cuts obeys a certain bound. The minimal possible value of this bound is of relevance to a model-independent location of the various singularities of scattering amplitudes. A simple and rigorous method is given for its construction and the numerical results of a singularity search are presented. The method is shown to be capable of accomodating unequal errors on the real and imaginary parts of the amplitude and is applicable to both simply and doubly connected domains (energy and cosine extrapolations).