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Variations on the Maiani-Testa approach and the inverse problem

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In their seminal publication of 1990, Maiani and Testa showed that physical amplitudes away from threshold cannot be directly extracted (i.e. without analytically continuing or solving an inverse problem), from infinite-volume Euclidean correlators. As a result, in realistic lattice calculations, the limited knowledge of correlation functions on finite subsets of points allows only for the extraction of approximate smeared spectral densities (or else amplitudes via finite-volume energies). In this presentation we discuss the recent results obtained in arXiv:2012.11488, which extend the original work of Maiani and Testa and relate it to spectral reconstruction methods.

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