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# $\pi\pi$ scattering on a renormalized Hamiltonian matrix

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A Wilsonian approach to $\pi\pi$ scattering based in the Glazek-Wilson Similarity Renormalization Group for Hamiltonian is analyzed in the $JI$ =00, 11 and 20 channels in momentum space up to a maximal CM energy of $\sqrt{s} = 1.4$ GeV. We identify the Hamiltonian by means of the 3D reduction of the Bethe-Salpeter equation in the Kadyschevsky scheme. We propose a new method to integrate the SRG equations based in the Crank-Nicolson algorithm with a single step finite difference so that sospectrality is preserved at any step of the calculations. We discuss issues on the high momentum tails present in the fitted interactions hampering calculations.

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