Check of phenomenological amplitudes for the pion-pion scattering using the dispersion relations.

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Multichannel phenomenological amplitudes for the pion-pion scattering, which were constructed demanding analyticity and unitarity of the S-matrix and using the uniformization procedure [1], will be discussed in view of the dispersion relations which, in addition, impose the crossing symmetry condition. A possible improvement of the amplitudes, to get better consistent with the dispersion relations, will be suggested in the threshold region in which the phenomenological amplitudes do not describe the experimental data properly. Consequences of the required modifications of the amplitudes, e.g. changes of the lowest-pole positions, will be also presented.

[1] Yu.S. Surovtsev, P. Bydžovský, R. Kamiński, M. Nagy: Phys. Rev. D **81** (2010) 016001;
Yu.S. Surovtsev, P. Bydžovský, V.E. Lyubovitskij: Phys. Rev. D **85** (2012) 036002.

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