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**Spurious poles in hadronic three-particle problems**[1] MARTIN EBERT, Technical University of Darmstadt, HANS-WERNER HAMMER, Technical University of Darmstadt, EMMI, GSI Darmstadt, AKAKI RUSETSKY, Helmholtz-Institut für Strahlen- und Kernphysik (Theorie) and Bethe Center for Theoretical Physics, Universität Bonn — The particle-dimer picture is a useful tool to simplify the three-particle problem by including information about the two-particle system. However, in higher orders the dimer propagator can exhibit spurious poles. We present a non-perturbative approach to deal with this problem and compare to fully perturbative schemes. The proposed approach might prove to be more convenient for the generalization in a finite volume. The method is tested with a Yamaguchi model potential.

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