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Weinberg's factor from helicity constraint

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Scattering amplitudes connect theoretical descriptions to experimental predictions. Low energy terms of the scattering amplitude tend to factorize from the high energy. Different methods have already been established to understand the mechanism of such factorization, Weinberg's theorem. With regard to the Weinberg soft factor, calculations have already shown that this factor has a universal character. In this talk, we show that it is possible to calculate this factor independently from the scattering amplitude based on the Wigner constraint. We also show that such constraint leads us to a system partial differential equation to simplify the construction of the Weinberg's soft factor for the case of one particle or two particles.

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