

## Undressing the nucleon with photons

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Allowing arbitrary dressing mechanisms for both pions and nucleons, it is shown that combining the respective fully dressed propagators with fully dressed electromagnetic currents in a consistent manner *completely* removes all dressing effects from half-on-shell combinations of the form (propagator) $\times$ (current). The key to this exact result is the realization that the coupling procedures for the electromagnetic field are necessarily different when applied to the respective scalar dressing functions of Dirac and scalar particles. This means, for example, that the usual gauge-invariant Ball-Chiu current ansatz for spin-1/2 particles suffers from an incomplete coupling procedure. Immediate and direct practical consequences for the descriptions of pion photoproduction off the nucleon and real Compton scattering processes on the pion and on the nucleon are discussed. For the latter processes, in particular, it is found that *all* dressing effects cancel exactly, *except* for contributions where hadrons loop around *two* photon insertion points.

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