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Nuclear model with explicit mesons

Thursday, 3 August 2023 15:40 (15 minutes)

We shall introduce a nuclear interaction model with explicit mesons where the nucleons do not interact directly but rather emit and absorb mesons which are treated explicitly on equal footing with the nucleons.

We shall show that the model is able to i) provide a bound neutron-proton state, the deuteron-[1], and ii) adequately describe the threshold pion photo-production off protons-[2].

Finally, we shall consider dressing of the bare nucleon with pions and investigate the resulting pion cloud of the nucleon.

[1] D.V.Fedorov, *Few-Body Systems* 61:40 (2020)

[2] D.V.Fedorov and M.Mikkelsen, *Few-Body Systems* 64:3 (2023)

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