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Entanglement in few-particle scattering events

We investigate the spin-entanglement in few-particle scattering following the analysis carried out by Beane et al. [Phys. Rev. Lett. 122, 102001 (2019)]. Our calculations are focused on the entanglement entropies of scattering processes involving Spin-1/2 and Spin-1 particles.

The entropies are evaluated using scattering data for neutron-proton and neutron-deuteron scattering and, taking into account the Coulomb interaction, also for proton-proton, proton-deuteron and deuteron-deuteron scattering.

In all cases, different entanglement entropies are compared and analyzed regarding their suitability as a measure of entanglement for the given process.

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