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Higher-Spin Baryon Photoproduction with Twisted Photons

Tuesday 30 November 2021 10:00 (30 minutes)

We may anticipate that future accelerator facilities will include the possibility of energetic twisted photons, which are photons with a structured wave front that can allow a pre-defined large angular momentum along the beam direction. Twisted photons are potentially a new tool in hadronic physics, and we consider here the possibility of selective photoproduction of higher-spin baryons using twisted photons. We show that particular polarization amplitudes can isolate higher-spin partial wave amplitudes, and selectively enhance signals from high spin baryons with minimal interference from lower spin resonances that are otherwise dominant.

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