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The nucleon spin and angular momentum

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In this talk I review the recent developments in the decomposition of the nucleon spin in QCD. I first explain two of the most well-known decomposition schemes, namely Jaffe-Manohar and Ji schemes, and discuss their pros and cons. I then introduce the newly achieved decomposition which is essentially the gauge invariant completion of the Jaffe-Manohar scheme. In this approach, the orbital angular momenta of quarks and gluons are related to certain moments of the Wigner distribution. Moreover, one can define the density (in Bjorken x) of the orbital angular momentum and determine its exact relation to twist-three generalized parton distributions (GPDs). Finally, if I have time, I will mention the case with the transverse spin decomposition as well as the possibility to measure the gluon helicity ΔG on a lattice.