

Nucleons consist of quarks and gluons. However, a deeper study of quarks is quite difficult, due to their almost immediate hadronization after leaving the nucleon (a process at the femtometre level). To describe the distribution of quarks in the nucleon, we can use parton distribution functions (PDF) and fragmentation functions (FF) to describe hadronization. The PDFs we are dealing with in this work are the transversity describing the correlation between the spin of a transversely polarized proton and the spin of a quark, and the Sivers function describing the correlation between the spin of a transversely polarized proton and the transverse momentum of a quark. These correlations combined with the fragmentation functions give rise to the Collins and Sivers asymmetry. From a theoretical point of view, we should get the same asymmetries for neutrons, just with the opposite sign. We then expect the asymmetries observed on the nucleus formed by a proton and a neutron to be close to zero in view of the results from previous experiments. In our work, we obtained the given asymmetries and verified that they are indeed close to zero.