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Search for three-nucleon force effects in elastic proton-deuteron scattering<sup>1</sup> NASSER KALANTAR-NAYESTANAKI, KVI, Groningen, The Netherlands — Three-body forces are, though small, very important in nature. The effect of these forces have far-reaching consequences in many fields of physics. A relatively good understanding of most phenomena in nuclear physics has been arrived at by only considering two-nucleon forces. However, high precision data emerging are revealing the shortcomings of these forces. At KVI, a program has been set up to study the effects of three-nucleon forces in elastic proton-deuteron scattering. High-precision cross sections, analyzing powers and spin-transfer coefficients have been measured at various incident proton or deuteron beam energies between 100 and 200 MeV for a large range of scattering angles. Calculations based on two-body forces only are clearly unable to predict the data. The inclusion of three-body forces brings the results generally closer to the data. However, there are still clear deficiencies in the calculations. The result of these recent measurements along with several calculations will be discussed. Furthermore, future plans to study the break-up reaction in the same system for an almost 4p geometry will be outlined.

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