

Status of polarized molecular source

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An experimental setup to obtain polarized hydrogen and deuterium molecules is described. To separate the molecules with different magnetic moments superconducting sextupole magnets of a polarized atomic beam source with a magnetic pole-tip field of 34 kG and a field gradient of 32 kG/cm are used. Arguments explaining the choice of the location of the source elements are also given. To obtain an ultra-high vacuum in the molecular beam detection chamber cryogenic pumps are used. At a nozzle temperature of 7 K, the measured flux of polarized hydrogen molecules was found to be $3 \cdot 10^{12}$ mol/s. For deuterium, the measured flux is smaller by a factor of seven due to the smallness of the magnetic moments. The experimental results are compared with the Monte-Carlo simulation

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