

Abstract Submitted
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Magnetic Trapping of NH Molecules with 20 s Lifetimes¹ EDEM
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gas cooling is used to trap NH molecules with $1/e$ lifetimes exceeding 20 s. Helium
vapor generated by laser desorption of a helium film is employed to thermalize 10^5
molecules at a temperature of 500 mK in a 3.9 T magnetic trap. Long molecule
trapping times are attained through rapid pumpout of residual buffer gas. Molecules
experience a helium background gas density below $1 \times 10^{12} \text{ cm}^{-3}$.

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