

# Helium Gas Cooling and Magnetic Trapping of Molecules

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Our experiment uses a cryogenic helium gas to cool neutral molecules for magnetic trapping. We have confined  $10^8$  molecules of ground-state calcium monohydride, CaH, in a static magnetic trap at 400 mK. CaH molecules were produced via laser ablation, cooled by a helium-3 buffer gas, and loaded into a 3.0 Tesla (2.0 K) deep magnetic trap. Cold molecule-atom interactions were studied in the CaH-He system at sub-Kelvin temperatures.

I will also discuss recent experiments which use evaporative cooling to further cool magnetically trapped atoms, and describe new methods of using helium gases to cool molecules for magnetic trapping.

## References

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