

# Precision Spectroscopy of Trapped Antihydrogen

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The ALPHA collaboration has recently reported on the highest-precision measurement of any pure antimatter system to date by performing a direct measurement of the 1S-2S transition of trapped antihydrogen atoms with a relative precision of approximately 2 parts per trillion [1]. We have also started mapping out the n=2 manifold with initial measurements of the 1S – 2P transition using a pulsed Lyman- $\alpha$  laser [2]. The details of these measurements will be presented, along with the future prospects for optical measurements with antihydrogen place as well as our long term plans for new measurements of this antimatter system.

## References

- [1] M. Ahmadi (The ALPHA Collaboration), *Nature*, **557**, (2018), 71.
- [2] M. Ahmadi (The ALPHA Collaboration), *Nature*, **561**, (2018), 211.