

## Precision Measurement of Vibrational Quanta in Tritium Hydride

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The spectroscopic investigation of the hydrogen molecule and its isotopologues is playing a crucial role in the advancement of quantum mechanics in the molecular domain. Particularly, highly accurate measurements of rovibrational transitions allow for various tests of fundamental physics including searches for physics beyond the Standard Model.

To carry these investigations on the tritium-bearing isotopologue HT, we developed a NICE-OHMS (noise-immune cavity-enhanced optical-heterodyne molecular spectroscopy) setup complying with technological challenges regarding confinement and chemistry of the radioactive tritium.

From this setup we present Doppler-free measurements on the (2,0) overtone band of the tritium hydride molecule.

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