

Ph.D. Student Position in Theoretical Molecular Chemistry/Quantum Optics



In a long-term research program we are pursuing high-resolution spectroscopy of the molecular hydrogen ions, with the goal of determining fundamental constants such as the electron-to-proton mass ratio, the radii of proton and deuteron, and the quadrupole moment of the deuteron. A second goal is development of methods for the manipulation of cold molecules. The molecular ions are trapped in an ion trap and cooled to milliKelvin temperature using laser cooling. We perform spectroscopy in the radio-frequency, THz and optical domains.

We are looking for a skilled and highly motivated theoretical Ph.D. student to develop a detailed theoretical understanding of the interaction of single and ensembles of trapped molecular hydrogen ions with external fields (Zeeman and Stark effects, light shifts, one- and two-photon transitions), including hyperfine structure and coherence effects, that will be applied for an accurate interpretation the experimental results. Applicants should have experience in quantum mechanical calculations. Salary level is 50% EG 13.

Apply to: Prof. S. Schiller, step.schiller@uni-duesseldorf.de .

For further information, see www.exphy.uni-duesseldorf.de