PhD position C:

**Precision spectroscopy of H₂ and T₂ for a test of the Standard Model**

This project involves working on precision frequency metrology studies on hydrogen molecules using advanced lasers, combined with atomic clock/frequency comb calibrations. Comparison with advanced QED calculations may reveal subtle effects of fifth forces beyond the Standard Model of Physics, and the existence of extra dimensions. These results on H₂ and various molecular hydrogen isotopologues (H₂, HD, D₂) will shed light on the proton size puzzle. Target is to improve the value of the dissociation energy of the hydrogen molecules and the fundamental vibrational splitting. The research program will be executed in a team with several students and PostDocs. We will extend the studies on hydrogen to tritium isotopes (T₂, DT, HT) for which we collaborate with the Karlsruhe Institute of Technology, where part of the measurements will be performed.

See also: [http://www.nat.vu.nl/~wimu/](http://www.nat.vu.nl/~wimu/)
Publications: [http://www.nat.vu.nl/~wimu/PUBS.html](http://www.nat.vu.nl/~wimu/PUBS.html)

The PhD position is open starting January 1, 2017. The position is funded by the foundation for Fundamental Research on Matter (FOM), with full FOM PhD salary and benefits (see [www.fom.nl](http://www.fom.nl) for details). Experience in experimental physics, laser physics, and molecular physics is useful.

You can send your application or questions by email to Wim Ubachs ([w.m.g.ubachs@vu.nl](mailto:w.m.g.ubachs@vu.nl)). Please include a letter of motivation as well as a CV.