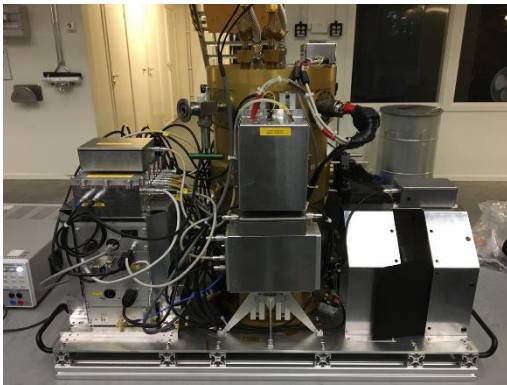


## Open PhD position in environmental quantum sensing at Humboldt University Berlin



We are looking for highly motivated, enthusiastic, and team-oriented PhD student with a background in physics/spectroscopy/quantum sensing. The goal is to develop a terahertz heterodyne spectrometer with quantum-limited sensitivity for the detection of atomic oxygen in the mesosphere and lower thermosphere of the Earth. Atomic oxygen is the main species at these altitudes. It plays an important role as an indicator of climate change in the upper atmosphere. The spectrometer will be implemented on a stratospheric balloon (see <https://www.dlr.de/os/en/desktopdefault.aspx/tabid-18659/>) as part of the OSAS-B spectrometer. It will significantly enhance the capabilities of the OSAS-B spectrometer by adding a new spectral band. These developments are particularly relevant for a future satellite mission as, for example, envisaged by ESA.



(left) OSAS-B spectrometer in the laboratory and (right) prior to launch with a stratospheric balloon.

### Job description

- Development of THz spectrometer (including local oscillator and detector with ultimate quantum-limited sensitivity)
- Implementation and evaluation of the spectrometer in OSAS-B
- Participation in measurement campaign with a stratospheric balloon
- Analysis of the spectrometer data obtained during a stratospheric flight
- Publication of results in peer-reviewed journals and presentation on international conferences

### Your profile

- Master degree in physics
- Experience in spectroscopy and/or quantum sensing
- The ability to work in a structured and independent manner
- Excellent problem-solving skills
- Excellent team and communication skills
- Good English or German language skills required; willingness to acquire the missing language skills

### **We offer**

- Exciting work environment on an attractive research campus in Berlin
- Stimulating exchange within the BOS.QT research school
- Close cooperation with the German Aerospace Center (DLR) in Berlin
- Participation in conferences and an international measurement campaign
- Three years contract with 75% of salary grade E 13 TV-L HU

### **Contact**

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