

**Master-Thesis: Model studies of the hydroxyl airglow layer**

Around the mesopause there is a layer of vibrationally-rotationally excited hydroxyl molecules. Emissions from this layer are useful indicators for chemical and dynamical processes in this altitude region, and can be used to derive rotational temperatures.

The aim of this master work is to perform model simulations of the hydroxyl airglow layer. For this purpose, an existing model of vibrationally excited hydroxyl molecules will be used, and modified. It is planned to run the model with input data from satellite instruments and from a one-dimensional atmospheric model. The predicted structure of the hydroxyl airglow layer will be compared with observations. A specific possible subject to investigate are the effects of gravity waves on the hydroxyl airglow layer.

There is no prior knowledge required in the area of the chemistry of the mesopause region or vibrationally excited molecules. The master candidate will be closely guided by the supervisor. Willingness to do some computer programming is required.

Contact: Holger Winkler (Room U3225, [hwinkler@iup.physik.uni-bremen.de](mailto:hwinkler@iup.physik.uni-bremen.de))