Spectroscopic investigation of molecular processes in liquid hydrogen isotopologues

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Calibration: Concentration vs. IR absorption

Investigation of molecular dimers

Van-der-Waals bonding

2 independent measurements

H₂
D₂

1 measurement of H₂/D₂ mixture

H₂
D₂
H₂/D₂ interaction

lines in in enhancement region can be assigned to molecular dimers

The TAπIR Experiment: IR spectroscopy on liquid hydrogen isotopologues

The T₂AπIR experiment: spectroscopy on liquid tritium

Accurate and precise Raman line position measurement

reproduce ISS conditions: achieved 8 weeks of continuous operation at 25 K

commercial spectrometer: Bruker RockSolid™, reliable and easily available

90 degree Raman system current work: complete uncertainty budget for line position measurement

simultaneous measurement of laser wavelength and calibration lamp to characterise laser stability

Tritium compatible experiment for Raman and IR spectroscopy in liquid phase

Insulation vacuum

Sumitomo RDK415D Cold Head