

Astrophysics and Molecular Physics

Module No.: MN-P-SP-Astro, MN-P-SP-Mol, MN-P-PN-Astro, MN-P-PN-Mol

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Course: Experiments in Molecular Physics

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Category	Type	Language	Teaching Hours	CP	Semester
Specialized Course	Advanced Laboratory Course & Lecture & Seminar	English	2	3	SuSe
Specialized Course	& Report	English	2 + 1	4.5	SuSe

Requirements for participation:

Atomic Physics, Molecular Physics and Quantum Mechanics at the level of the bachelor courses in physics, Molecular Physics I

Type of module examinations:

One oral examination at the end of the module

Duration of the course:

1 semester

Aims of the course:

In this advanced lab course detailed experiments in molecular physics will be conducted. The results will be analysed and compared to literature results. A lecture helps for introduction in the related subjects. At the end of the course participants will present their work in front of the other participants. Optionally, a written report finalizes the whole course yielding additional 1.5 CP. The intention of this course is to get hands on experience with state-of-the-art experimental techniques in molecular physics.

Contents of the course:

- THz spectroscopy: Molecular Rotation
- Infrared spectroscopy: Molecular Vibration, ro-vibrational spectroscopy
- Raman spectroscopy: Molecular Vibration and Rotation
- Other experiments depending on availability

Recommended literature:

Bachelorthesis, Staatsexamen, etc....