

Molecular Physics

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

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Course: Introduction to atmospheric physics

Lecturers: A. Kiendler-Scharr, H. Fuchs

Email: a.kiendler-scharr@fz-juelich.de

Category	Type	Language	Teaching Hours	CP	Semester
Specialized Course	Lecture	English	2	3	SuSe

Requirements for participation:

Atomic Physics, Molecular Physics and Thermodynamics at the level of the bachelor courses in physics

Type of module examinations:

One oral examination at the end of the module

Duration of the course:

1 semester

Aims of the course:

Understanding basic physical laws that govern the existence and properties of the atmosphere.

Contents of the course:

The lecture introduces to basic atmospheric physics and global aspects of atmospheric chemistry in the troposphere, specifically the following topics are covered:

- Structure and composition of the atmosphere
- Greenhouse effect and climate change
- Budgets and distributions of tropospheric trace gases
- Physical chemistry of aerosols

Recommended literature:

- W. Roedel, T. Wagner, "Physik unserer Umwelt: Die Atmosphäre (German Edition), Springer, aktualisierte Aufl. 2011
- J.H. Seinfeld, S.N. Pandis, "Atmospheric Chemistry and Physics: From Air Pollution to Climate Change", Wiley-Interscience, Second Edition
- "Global Aspects of Atmospheric Chemistry (Topics in Physical Chemistry)", R. Zellner (Editor), Topics in Physical Chemistry (Book 6), Publisher: Steinkopff, First Edition
- D. Jacob, "Introduction to Atmospheric Chemistry", Princeton University Press, First Edition
- B.J. Finlayson-Pitts, J.N. Pitts Jr., "Chemistry of the Upper and Lower Atmosphere: Theory, Experiments, and Applications", Academic Press, First Edition