

Introduction



The page features the ARTS logo in large, bold, dark blue letters on the left. To its right, the text "The Atmospheric Radiative Transfer Simulator" is written in a smaller, dark blue serif font. Below this, a horizontal navigation bar contains links: "What is ARTS?", "Science with ARTS", "Getting ARTS", "Documentation", "Tools", and "Contact".

Advanced Radiation and
Remote Sensing
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Modus operandi

- ▶ Mixture of short lecture and a lot of practical exercises, all in the same place and time slot.
- ▶ Examination: Short project towards the end of the course.
- ▶ This course is experimental and meant to be rugged. Don't expect any polish. Don't even expect everything to work properly.

Main tool

- ▶ Most (all?) exercises will somehow involve our own radiative transfer model: ARTS
- ▶ After the course, you should be able to use ARTS and the tools around it for your own projects!

Roadmap

1. Spectroscopy

- a) Rotational spectra
- b) Vibrational spectra
- c) Line shape

2. Radiative transfer

- a) Brightness temperature and radiative transfer
- b) Jacobians and the opacity rule

3. Thermal radiation transports energy

- a) Outgoing longwave radiation
- b) Heating rates

4. Radiation field inside a cloud

5. Diverse datasets and meteorological sensors

6. Solar shortwave fluxes and heating rates

Increasingly
uncertain

