



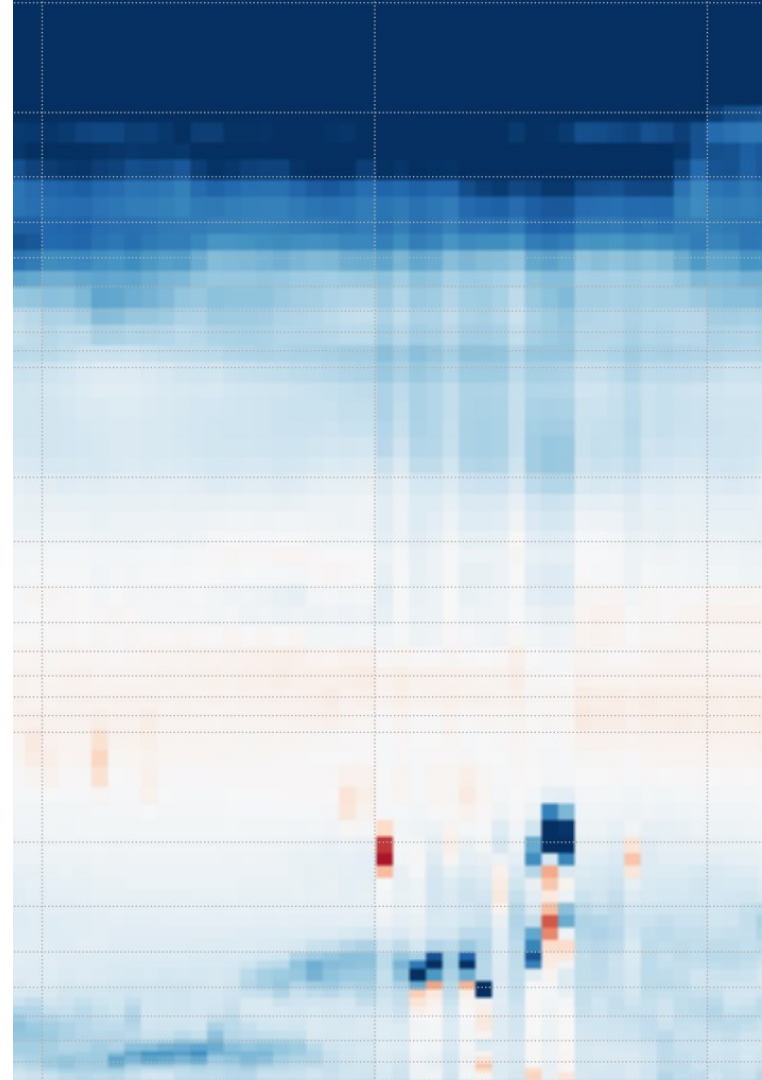
Universität Hamburg
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FAKULTÄT
FÜR MATHEMATIK, INFORMATIK
UND NATURWISSENSCHAFTEN

pyarts-fluxes

An easy way to simulate fluxes with ARTS

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What is the problem?

- Though ARTS is by its python-interface already quite user-friendly, but its complexity can be overwhelming.
- For example, you simply want to simulate the clear sky radiative flux and the heating rates from some atmospheric profile.
- To setup an ARTS simulation for this is a challenging task, if you are not an ARTS expert (and even for them, it can be sometimes tedious...;))
- ...and I do not like that.

One solution: pyarts-fluxes

- Python module
- An easy-to-use wrapper
- It provides predefined setups for simulating fluxes.
- It is an add-on, but not a replacement for ARTS.

```
LW_flux_simulator = fsm.FluxSimulator(setup_name + "_LW")
LW_flux_simulator.ws.f_grid = f_grid_lw

results_lw = LW_flux_simulator.flux_simulator_single_profile(...)
```

What is pyarts-fluxes actually doing?

- Predefines absorption, agendas, ...
All that stuff that is probably always the same if doing flux simulations, but you always have to setup.
- Delivers several convenience functions as lookup-table creation, generate profiles in an ARTS format, ...
- The ARTS Workspace is still accessible.
- I will explain more details when we go through the examples, but first...

Where to get it?

The screenshot shows the GitHub repository page for `atmtools/pyarts-fluxes`. The repository is public and has 1 branch (main) and 0 tags. The repository structure is as follows:

| File | Commit Message | Time |
|--------------------------------|---|--------------|
| <code>atmdata</code> | Initial commit | 3 months ago |
| <code>examples</code> | Add explicit allsky example and remove scattering from origi... | last week |
| <code>scattering_data</code> | Initial commit | 3 months ago |
| <code>src/FluxSimulator</code> | Add bugfix when using default geo pos | last week |
| <code>.gitignore</code> | Add function and example to create GriddedField4 | 3 months ago |
| <code>README.md</code> | Adjust to new project-name | 2 weeks ago |
| <code>pyproject.toml</code> | Fix toml | 2 weeks ago |

The README content is as follows:

pyarts-fluxes

Python module for calculating radiative fluxes with ARTS. The module is an easy-to-use wrapper to calculate radiative fluxes with ARTS. The idea behind is to prepare a basic setup so that the user can easily calculate radiative fluxes with ARTS without having to deal with the actual ARTS simulation setup. Experienced users can still access the ARTS workspace and modify it as they like.

Get ARTS (pyarts): <https://radiativetransfer.org/getarts/>

Requirements

About

No description, website, or topics provided.

- Readme
- Activity
- Custom properties
- 0 stars
- 1 watching
- 1 fork

Report repository

Releases

No releases published

Packages

No packages published

Languages

- Python 100.0%

Installation

```
git clone https://github.com/atmtools/pyarts-fluxes
```

```
cd pyarts-fluxes
```

```
python -m pip install --user -e .
```

Examples...

- Clear sky examples
- Generate atmospheric profiles
- Generate lookup table

Open your python IDE and open from the examples folder the file
“flux_simulator_single_atm_example.py”