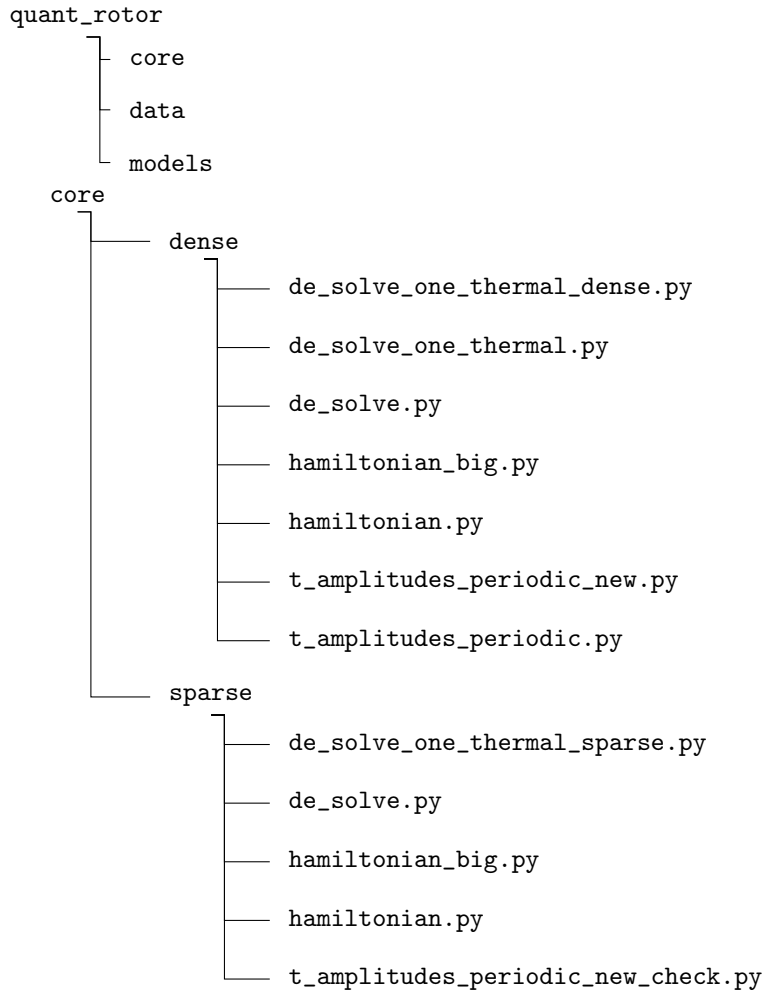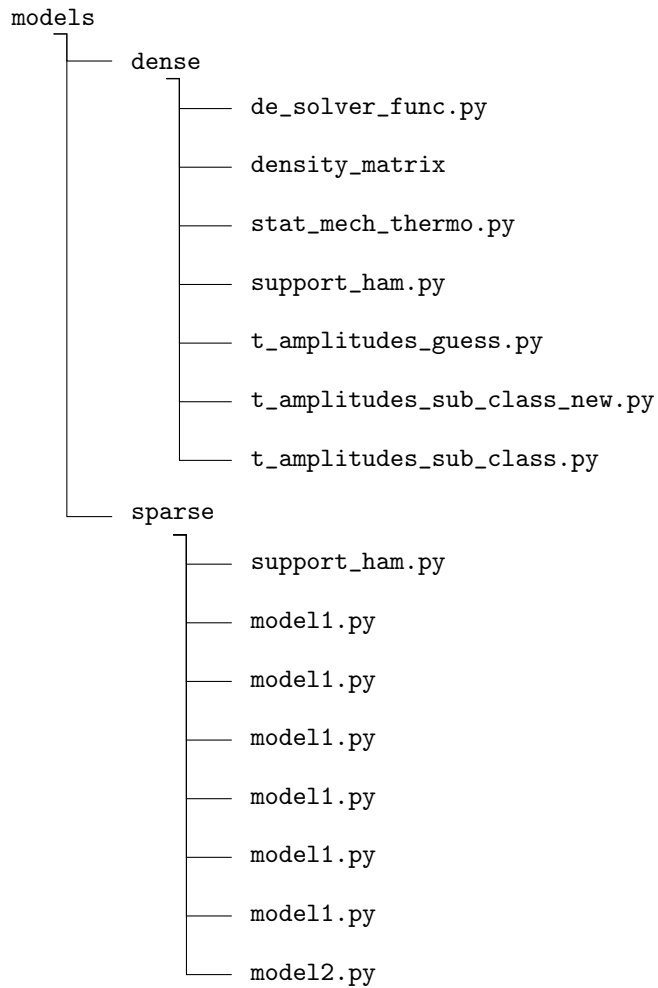# 1 Code Documentation

This document is created to give a general overview of the code for the means of reviewing seeing and tracking progress as well as for traning purpuses.

The github repository contains more files which could be usefull but this document would only be talking about the "quant_rotor" library. The files in a discarded foulder are ether done projects or discarded ideas; files that are in the main foulder are ususally files with the work in progress.

1.1 Library File Structure and Breakdown

```
quant_rotor
        ├─ core
        ├─ data
        └─ models
    core
        └── dense
                    ── de_solve_one_thermal_dense.py
                    ── de_solve_one_thermal.py
                    ── de_solve.py
                    ── hamiltonian_big.py
                    ── hamiltonian.py
                    ── t_amplitudes_periodic_new.py
                    ── t_amplitudes_periodic.py
        └── sparse
                    ── de_solve_one_thermal_sparse.py
                    ── de_solve.py
                    ── hamiltonian_big.py
                    ── hamiltonian.py
                    ── t_amplitudes_periodic_new_check.py
```

```
models
    ├── dense
    │       ├── de_solver_func.py
    │       ├── density_matrix
    │       ├── stat_mech_thermo.py
    │       ├── support_ham.py
    │       ├── t_amplitudes_guess.py
    │       ├── t_amplitudes_sub_class_new.py
    │       └── t_amplitudes_sub_class.py
    └── sparse
            ├── support_ham.py
            ├── model1.py
            ├── model1.py
            ├── model1.py
            ├── model1.py
            ├── model1.py
            ├── model1.py
            └── model2.py
```

2 Math Example

Here is an inline equation: $E = mc^2$.

And here is a displayed equation:

$$\int_0^\infty e^{-x^2}\,dx = \frac{\sqrt{\pi}}{2}.$$
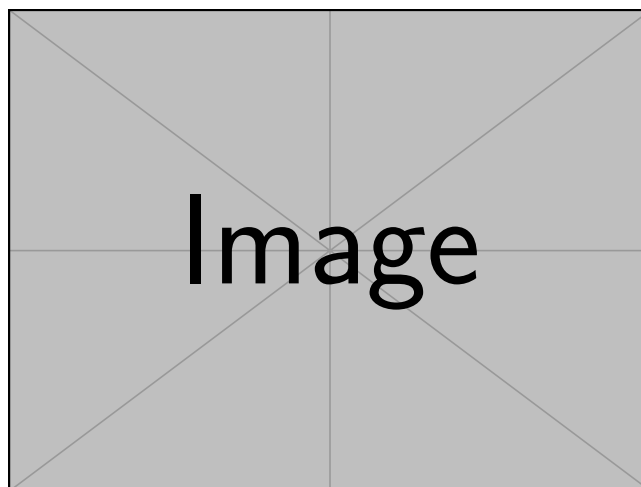
3 Including a Figure

Figure 1: An example figure.

4 Conclusion

That's all for now. Happy LaTeX writing!