

Optimal control with Qudi

17.09.2021, Tutorial QuOCS-Qudi



QuOCS in Qudi

Introduction to QuOCS



✦ QuOCS (Quantum Optimal Control Suite) is composed of

✦ Client interface	User	<ul style="list-style-type: none">✦ defines the OC problem✦ puts constraints on the controls✦ chooses the OC algorithm
✦ Optimization Code	Server/User	<ul style="list-style-type: none">✦ elaborates the Client settings✦ performs the optimization

✦ Communication Client-Server

	Optimization code	Support Packages
✦ Remote	runs in Remote Server	Paramiko library
✦ Local	runs locally	
✦ All-in-one	Called by the Client interface	

QuOCS in Qudi

QuOCS as a plugin for Qudi

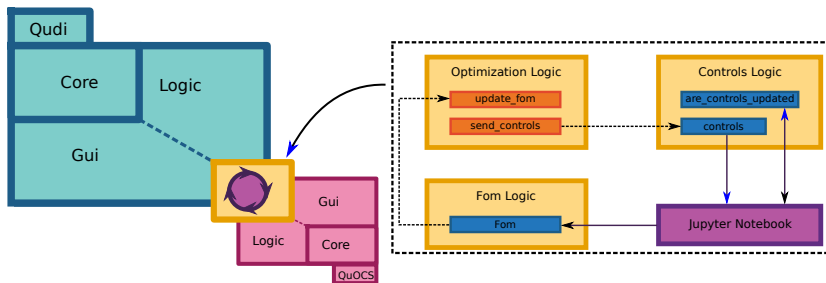


✦ QuOCS inside Qudi has its own:

- ✦ Gui/optimalcontrol
- ✦ Logic/optimalcontrol

✦ Qudi - QuOCS interacts via Jupyter notebooks with:

- ✦ Functions
- ✦ Signals/Slots



QuOCS in Qudi

Installation



- ✦ Install the QuOCS library in the Qudi environment

```
pip install git+https://github.com/Quantum-OCS/QuOCS#egg=quocs-lib
```

- ✦ Clone and install the qt interface in the Qudi environment

```
git clone git@github.com:Quantum-OCS/QuOCS-pyside2interface.git
```

```
pip install -e .
```

- ✦ Create the ui classes with pyqt5 or pyside2

```
python convert**.py
```

- ✦ Move the optimalcontrol folders to the gui and to the logic of your qudi installation

QuOCS in Qudi

Test with jupyter notebook



✦ Open Qudi with the `optimal_control_quocs.cfg`

✦ Go through the jupyter notebook