Poster Presentation for the Safed Seminar

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Spectral Restrictions in the Krotov Algorithm
(together with José Palao and Christiane Koch)

- **monotonically convergent** extension of the general Krotov algorithm including constraints on the pulse in **frequency and time domain at the same time**.
- update is calculated by numerically by solving a **Fredholm integral equation of second kind**
- spectral restriction on the pulse can also be used in conjunction with different gradient type optimisation methods
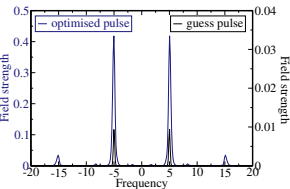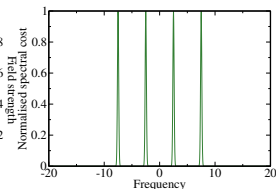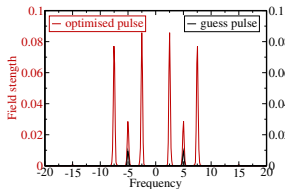
Efficient characterisation of quasi-unitary quantum operations

(together with Giulia Gualdi and Christiane Koch)

- **unitary part of a quantum channel** can be charaterised using a **reduced set of states** (in contrast to using the full basis)

- amount of states that need to be propagated to optimise a unitary transformation under dissipation is **independent of system size**

- **computational and experimental effort for quantum tomography** of a unitary quantum channel can be **greatly reduced**, information gained by propagation and measurement of the reduced set can be used to **accurately estimate gate error**