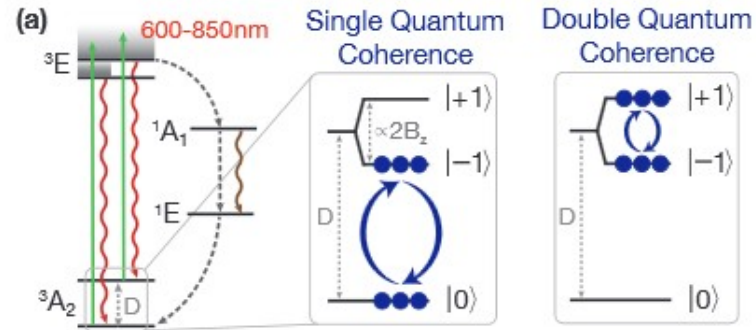


Double Quantum with Floquet Dynamics

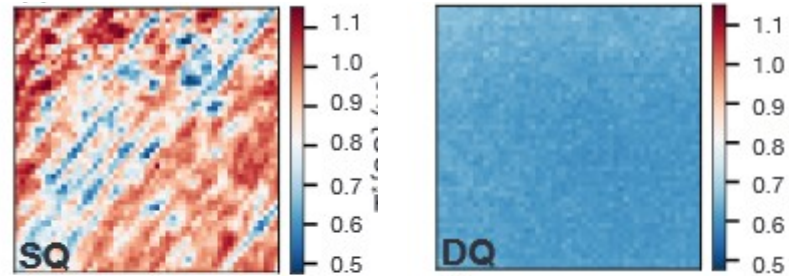
Jonas Meinel

About Double Quantum

- Goal: Create and readout double quantum state (e.g arXiv:2009.02371)

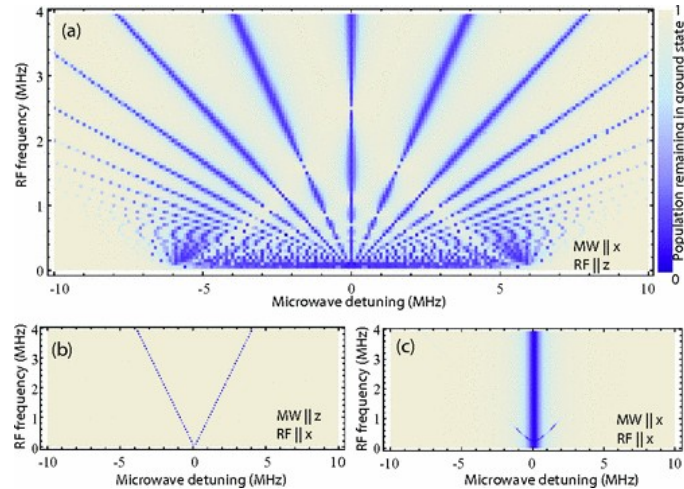
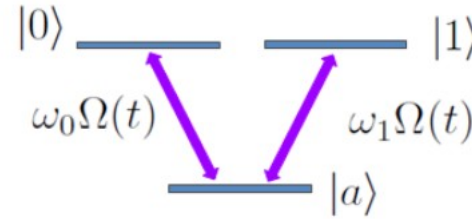


- Application: Remove strain inhomogeneity



How to Double Quantum

- Two MW frequency drive (e.g. Farida thesis 2019)
- Floquet driven system? (e.g. Childress 2010)

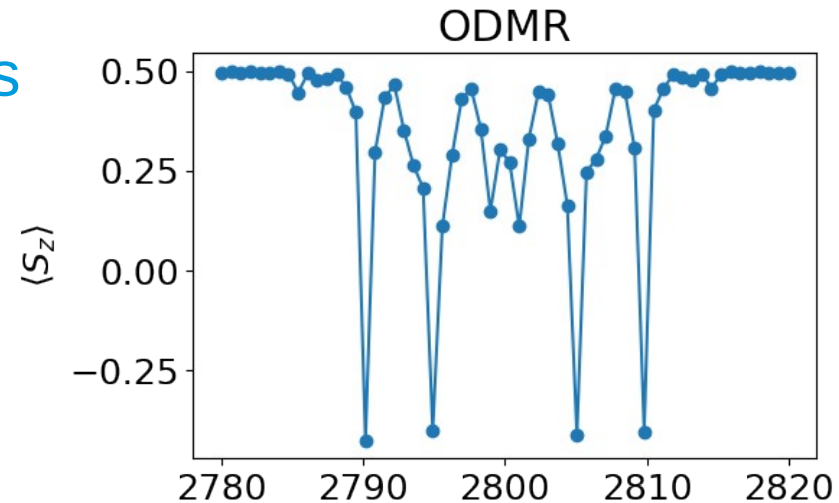


Simulations – Floquet Dynamics

- Hamiltonian

$$H = \omega_s S_z + \Omega_{\text{rf}} \sin(\omega_{\text{rf}} t) S_z + \Omega_{\text{probe}} \sin(\omega_{\text{probe}} t) S_x$$

- ODMR of Floquet → Sidebands
- Double Quantum?



Simulations – Floquet and Double Quantum

- Overlapping two sidebands \rightarrow Transition from $0 \rightarrow +1$

- Summary:

- Floquet can help create DQ-states
- Possible at small magn. fields

