Sinlge InAs/GaAs quantum dot located in L3 photonic crystal cavity

Observe far off-resonant cavity mode emission with non-linear pump-power dependence

Off-resonant cavity PL is anti-correlated with QD emission. This can be seen in cavity-$X^0$ cross-correlation measurements

System is in the strong coupling regime of cavity QED. We can probe the fine structure of QD states.

Photoluminescence (PL) spectroscopy


M. Winger et al., PRL 101, 226808 (2008)
Monte-Carlo simulation of system dynamics

Cavity feeding from QD background transitions

Extended QD level spectrum

Extract correlation functions from Monte-Carlo runs

Cross-Correlation cavity-X0

Auto-Correlation cavity mode