

Internal Webinar

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Topic-I: Non-classicality of photonic and atomic Schrodinger cat states: Coherent states are called classical states because they have the lowest uncertainty. Superposition of two or more coherent states can result in non-classical states. The project investigated this non-classical behaviour on cat states based on photons as well as angular momentum states of atoms.

Topic-II: Generation of waveform samples for Transmon control and characterisation: Transmon qubits are controlled using microwave pulses with phases, lengths and other parameters. The samples for intermediate frequencies (IF) of such pulses were made. These pulses would later be produced using a DAC and passed through a mixer. We developed characterisation sequences such as Rabi, T1, T2 as well as pulse sequence for qubit gate operations in input by the user.

Topic-III: Atomic magnetometer based on Rubidium atoms: Nonlinear magneto-optic effect of rotation of polarization in the presence of a magnetic field can be harnessed to detect very feeble magnetic fields. A basic polarizer setup was developed for this purpose.

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11:30 AM

