

CQSE Weekly Seminar

2018
Sep. 28, Friday

TIME Sep. 28, 2018, 14:30 ~ 15:30
TITLE Design Considerations of ESR Structures: Microwave Engineering's Perspective
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Abstract

In this talk, the planar transmission line topology commonly used as an ESR structure for spin manipulation is briefly reviewed first. While the fringing magnetic field of microstrip line is the key for ESR line application, the fringing magnetic and/or electric fields may also be detrimental to operations of nearby devices that are susceptible to external ac fields and the proximal control or readout lines. Therefore, meticulous control of the fringing field distribution of ESR line might be essential to the implementation of multi-qubit systems. To this end, several variants of the planar waveguiding structure, i.e. the conductor-backed coplanar waveguide (CBCPW), will be introduced as an alternative and compared with each other. The feasibilities of these waveguiding structures and two miniaturized resonator structures as an ESR line will be discussed as well.

