

Abstract Submitted  
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**Adjusting the dc-SQUID working point by a flux trapping loop for readout of gap-tunable flux qubit** XIAOBO ZHU, YULIN WU, HUI DENG, YARUI ZHENG, NAHEED AKHTAR, JIE FAN, DONGNING ZHENG, LI LU, Chinese Academy of Sci (CAS) — When the flux qubit is readout by a dc-SQUID, normally people use a coil to bias both the qubit and the dc-SQUID. However, if the working point of the qubit is located on the bottom or the top of the dc-SQUID's critical current modulation region, the readout is hardly carried out. We insert a flux trapping loop into the readout dc-SQUID. By trapping different numbers of fluxoids in the loop, the flux bias of the dc-SQUID can be changed accordingly, while the flux bias of the qubit changes very little because of the very small mutual inductance between the qubit and the trap loop. This improvement enables us to carry out the readout in the complicate experiments of gap-tunable flux qubit.

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