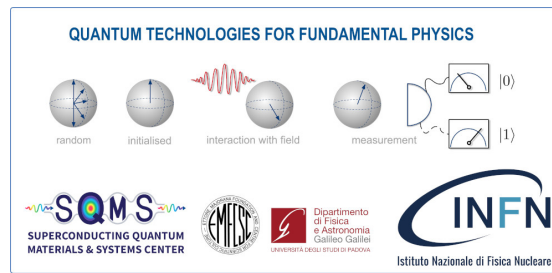


Quantum Technologies for Fundamental Physics



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MAGO activities at Fermilab and Frequency stability of SRF cavities (microphonics).

Monday, 4 September 2023 11:55 (25 minutes)

At Fermilab we are working with DESY and INFN to revive the MAGO experiment. We started several activities in preparation for the arrival of the cavity onsite in order to be able to successfully cold test the cavity and successively conduct a GW search.

There are several proposed experiments to search for Dark Matter that will utilize SRF cavities submerged into liquid Helium. Extremely narrow bandwidth of SRF cavities (<1 Hz) and requirements for cavity frequency stability will be obligated special measures to mitigate any vibrations from external sources that will be penetrated and re-tuned cavity. In the talk recent FNAL experience of measuring microphonics of SRF cavities used for Dark Photon experiment will be presented. FNAL's program to mitigate SRF cavity microphonics (in passive and active way) will be presented

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Session Classification: Cavities and Quantum Technologies for Gravitational Waves