Quantum Technologies for Fundamental Physics



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Quantum sensor networks with high efficiency transduction

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Quantum transducers facilitate the conversion of quantum information and signals across various physical platforms. In the field of sensing, microwave-optical quantum transducers hold particular significance in enhancing the capabilities of superconducting quantum sensors by harnessing the strengths of both microwave and optical photons. Here, we will address crucial technological aspects related to high-efficiency microwave-optical quantum transduction. The objective is to advance the development of quantum sensors and distributed sensor networks for fundamental physics experiments like haloscopes and dark matter investigations.

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