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The QUAntum LImited PHotons In the Dark Experiment

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QUAntum LImited PHotons In the Dark Experiment (QUALIPHIDE) searches for Hidden Photons (HP) as dark matter. Quantum sensing techniques, such as photon counting, enable exploring new phase space for both HPs and axion like particles as candidates for dark matter. We have fielded a deeper than standard quantum limit search with single photon resolving MKIDs. This newest version of QUALIPHIDE operates in 4-16 THz (˜50 meV hidden photon masses), with expected sensitivity of kinetic mixing $< 10^{-12}$. The talk will outline detector technologies being explored, and our plans to pursue such dark matter searches with THz MKIDs.

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