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First Results from the Taiwan Axion Search Experiment with Haloscope at $19.6\mu\text{eV}$

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The Taiwan Axion Search Experiment by Haloscope (TASEH) is the first axion experiment in Taiwan. Our detector system included a tunable-frequency cavity immersed in a static magnetic field of 8 Tesla and an amplifier chain with a system noise of $\sim 2.2\text{K}$. From the first data taken in 2021, we excluded the axion-photon coupling $|g_a| 8.2 \times 10^{-14} \text{GeV}^{-1}$, a factor of eleven above the benchmark KSVZ model, in the axion mass range $19.4687 - 19.8436 \mu\text{eV}$. This is the first constraints on g_a in this mass region from a haloscope-type experiment.

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