

## Multimessenger Astronomy Beyond the Standard Model and Quantum Sensing (Q-EYES 2025)



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### Principles and fundamental-physics applications of diamond quantum sensors

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Diamond quantum sensors based on nitrogen-vacancy (NV) centers have attracted great attention owing to their high sensitivity, wide dynamic range, and high spatial resolution. Utilizing these outstanding properties, diamond quantum sensors have recently been proposed for applications in fundamental physics, including dark matter searches and investigations of quantum gravity. In this presentation, we will provide an overview of the operating principles of NV-based quantum sensors, recent advances in diamond materials, and their applications to studies of fundamental physics.

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