

Mechanical architectures for fundamental physics detection

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Mechanical sensing technologies in the classical and quantum regimes have been demonstrated across an enormous range of frequency and mass scales. I'll overview some ideas about using these sensing techniques to look a diverse variety of dark matter candidates, including ultra-light ($m < \text{meV}$) and ultra-heavy ($m > m_{\text{GUT}}$) fields. The theory of quantum backaction-evading measurements, especially of the momentum of a device, will play a key role in the more ambitious examples.

Presenter: CARNEY, Dan

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