

# COLLOQUIUM

## Cosmography with Black Hole Binaries

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Black hole binaries are a wonderful self-calibrating standard candle by which we can map the expansion of the universe...if only we could break the degeneracy between the redshift and luminosity. Three tricks will allow us to do this with gravitational wave detectors: (1) Quantum-free interferometry, (2) mirrors with no internal friction, and (3) a short baseline interferometer in space.