

Abstract Submitted  
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**Ion Interferometry**<sup>1</sup> DALLIN DURFEE, Brigham Young University —  
An interferometer is a device which exploits wave interference to make very precise measurements. Because everything exhibits quantum wave properties, in addition to things that we typically think of as waves (such as light and sound) we can, in theory, interfere. . . anything. In our lab we are constructing a device which will use the interference of strontium ions to detect changes in electric and magnetic fields with unprecedented sensitivity. One application of this device will be the search for violations of Coulombs law and extremely rigorous tests of the accepted theory of electromagnetism.

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