38th INTERNATIONAL CONFERENCE
ON HIGH ENERGY PHYSICS
AUGUST 3 - 10, 2016
CHICAGO

Contribution ID: **1412** Type: **Oral Presentation**

Search for Space-Time Correlations from the Planck Scale with the Fermilab Holometer (15' + 5')

Thursday 4 August 2016 09:45 (20 minutes)

Measurements are reported of high frequency cross-spectra of signals from the Fermilab Holometer, a pair of co-located 39 m, high power Michelson interferometers. The instrument obtains differential position sensitivity to cross-correlated signals far exceeding any previous measurement in a broad frequency band extending to the 3.8 MHz inverse light crossing time of the apparatus. General experimental constraints are placed on parameters of a set of models of universal exotic spatial shear correlations, with a sensitivity that exceeds the Planck scale holographic information bound of space-time position states by a significant factor. Current status and future plans are discussed.

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Session Classification: Astro-particle Physics and Cosmology

Track Classification: Astro-particle Physics and Cosmology