

Abstract Submitted  
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**Preliminary work for developing a Method for Surface Wave Detection**<sup>1</sup> ANDREW JOHANNESSEN, AMY ZHENG, University of Kansas — It is theoretically possible to improve current methods of ultra-high energy neutrino detection by observing askaryan radiation via dielectric-dielectric surface waves rather than bulk waves. The purpose of our research was to observe properties of these surface waves within the paradigm of neutrino detection. Observations were made of waves propagating through various dense dielectric mediums including granulated fused silica, polystyrene foam, deionized water, and granulated sodium chloride at preliminary frequencies of 1500, 1000, and 750 MHz. Larger scale granulated fused silica measurements were taken at the frequencies of 600 and 300 MHz. Limited experimental result would indicate a qualitative increase in attenuation length for radio frequency waves propagating along a dielectric-dielectric surface rather than exclusively in either dielectric substance. Further investigation should be in the far-field, substantially lower frequency, and in the context of the surface layer between ice and air.

<sup>1</sup>Thank you to Dave Besson and Marie Piasecki

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