

Abstract Submitted  
for the DNP08 Meeting of  
The American Physical Society

**Determining Entropy Generation in the Early Universe / Links to CMBR Spectra & neutrino and relic graviton production issues** ANDREW BECKWITH — We analyze how entropy is generated via a semiclassical argument as well as by multiple brane- anti brane combinations leading to an initial soliton-instanton formation. The supposition is that the two different types of methods give similar initial conditions for entropy and information/ computational bits of information in the initial universe. We close then with observations we think are pertinent to entropy increase and also the variation of statistical noise about the CMBR spectra. This ties in with possible new species of detectable ‘neutrinos’ which lead to an extension of the standard model, since the derived ‘axion’ is coupled to photons to the tune of  $f_a = \vartheta(10^{15} GeV)$  which is too large for Earthbound experiments (but which is in the range of space based experiments/ data collection of astro physical phenomena, which could be detected by analysis of the CMBR spectra). This if there is a tie in with relic gravitons and the new neutrino candidate, indicates new detection schemes for both, which could be detected by both the new Li-Baker gravity wave detector, as well as Ice Cube.

Andrew Beckwith

Date submitted: 26 Jun 2008

Electronic form version 1.4