

Abstract Submitted
for the TSS07 Meeting of
The American Physical Society

How Can Brane World Physics be reconciled to early universe applications of relic thermal input as given by LQG to inflationary cosmology? ANDREW BECKWITH, APS/ Fermi contractor — We are investigating how LQG and brane world physics predictions can be reconciled. As it stands, Brane world models exclude the quantum bounce dynamics seen in LQG; in particular Akshenkhar's construction of a prior universe collapsing to a singularity is undoable in contemporary Sundrum brane world physics. The author presents how answering Sean Carroll's supposition of a pre inflation state of low temperature-low entropy pre inflation state as given in 2005 provides a bridge between two models with radically different predictions. I.e. Loop quantum gravity may be giving us a template as to thermal input which answers relic graviton production issues, and CMB production which are presently unanswerable via brane world physics. This is also a way of getting around the fact that conventional cosmological CMB is limited by a barrier as of a red shift limit of about $z = 1000$, i.e. when the universe was about 1000 times smaller and 100,000 times younger than today as to photons, and to come up with a working model of quintessence scalar fields which permits relic generation of dark matter/dark energy.

Andrew Beckwith
APS/ Fermi contractor

Date submitted: 26 Feb 2007

Electronic form version 1.4