

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Entanglement of Dirac fields in an expanding spacetime¹ IVETTE FUENTES-SCHULLER, University of Nottingham, ROBERT B. MANN, University of Waterloo, SHAHPOOR MORADI, Razi University — We study the entanglement generated between Dirac field modes in a d-dimensional Robertson-Walker expanding universe. In the two-dimensional case, we compare the bosonic and fermionic entanglement generated by the expansion of the Universe. We find qualitative differences, in particular, we show that the entanglement generated between fermionic field modes is considerably lower than the bosonic case. This result, together with previous investigations on entanglement in non-inertial frames, suggest that entanglement between fermionic modes is less affected by the underlying space-time.

¹I. F-S was supported by EPSRC

Ivette Fuentes-Schuller
University of Nottingham

Date submitted: 04 Jan 2010

Electronic form version 1.4