Editor's Statement

Beckwith & Glinka on the Thermodynamics in Early Big-Bang Cosmology

Philip E. Gibbs[*]

Abstract

This is the editor's statement on Glinka's Commentary and Beckwith's Response to Commentary published in this issue of Prespacetime Journal.

Key Words: entropy, thermodynamics, Early Universe, Big Bang.

Last year the Prespacetime Journal published some interesting work by A. Beckwith and L. Glinka on the thermodynamics in early big-bang cosmology [1-2]. Since then Glinka has reassessed his use of an entropy formula derived by Beckwith in this work, and has submitted a note in which he disputes the validity of these results. Glinka's argument is that the Beckwith formula is based on the work of J. Martin [3] using a slow-roll approximation during the inflationary period and that this approach is inconsistent. In his note he provides an alternative analysis of the entropy that he claims is more general and leads to different results.

Beckwith has responded to this criticism with a further note in defence of his formula. He indicates that the formula is supported by the Work of Y. Jack Ng [4] and infinite quantum statistics and that he considers it to be correct. Glinka has reviewed this response and does not accept the conclusions.

We have reviewed these two contributions and failed to form a definitive opinion on who is most correct. Therefore we have decided that the best policy for us is to publish both notes together with this editorial comment so that interested parties can determine for themselves which path they should follow.

References

[1] A. Beckwith and L.A. Glinka, "The Arrow of Time Problem: Answering if Time Flow Initially Favouritizes One Direction Blatantly", PSTJ Vol 1, issue 9, pp 1358-1375 (2010).

[2] L.A. Glinka, "A New Face of the Multiverse Hypothesis: Bosonic-Phononic Inflaton Quantum Universes", PSTJ vol 1, issue 9, pp. 1395-1402 (2010).

[3] J. Martin, "Inflationary Perturbations: The Cosmological Schwinger Effect", in M. Lemoine, J. Martin, and P. Peter (Eds.), Inf lationary Cosmology (Springer, 2008), pp. 193-242.

[4] Y. J. Ng, "Spacetime Foam: From Entropy and Holography to Infinite Statistics and Nonlocality", Entropy 2008, 10(4), 441-461.

[*] Correspondence: Philip E. Gibbs, Ph.D., Independent Researcher, UK. E-Mail: phil@royalgenes.com