Bekenstein Bound Action on the 3rd Cyclic Universe Produced MHCE8S Starting Energy for the 4th Universe

George R. Briggs

Abstract: The starting energy for the 4th cyclic universe came from Bekenstein collapse energy produced by the 3rd cyclic universe.

I published earlier on Bekenstein bound effects on the stability of cyclic universes (unfortunately with holography calculation errors which I know now how to avoid\(^1\)); now I will consider Bekenstein-bound collapse effects of the first three cyclic universes and their consequences.

According to Bekenstein, the mc^2 energy of a collapsing universe is given by \(E = \frac{1}{2} \times \pi \times R \times \hbar \times c\), where \(R\) is the radius reached just before collapse. Now for the 4th cyclic universe \(13.5 \times 10^9\) years age and \(R = 4.1082355 \times 10^{26}\) M were the scheduled collapse parameters, but thanks to nature the collapse did not happen. For our (holographic) universe, \(E\) (GeV) per galaxy = 13.36 (13.5-0.1-0.04) (broken-E8 symmetry cool universe age in billions of years), i.e. energy per galaxy tracked time exactly. This means that for our broken-E8 symmetry cool universe age of 13.36 billion years, \(E = 13.36\) GeV/galaxy. Now for time running backwards, 100X 13.36 = 1336 GeV/galaxy and this energy is greater (1.003892) than the \(1330.82\) GeV/galaxy (see my latest flow diagram) starting energy of the forward-time, reverse-time action shown on the flow diagram.