

Atomic Bomb Model of Quantum Cosmogenesis

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Abstract

In a series of recent essays I have sketched out the relationships between 'gravitational axions', and the origin of the universe - within an early inflation like quantum cosmogenesis event, without providing any specific details on how such an event might transpire. In this essay I will sketch out a specific toy model of quantum cosmogenesis, based upon the observation of black hole formation in this universe. In this scenario, the quantum cosmogenesis event consists of the quenched ignition of a hot superfluid condensate, well into the transition regime of the BCS-BEC (the Bardeen-Cooper-Schrieffer to Bose-Einstein condensation) crossover regime - layered into a sphere, and then inflated. The dimensional inflation of a flat (Minkowski like) three dimensional superfluid is accompanied by a strong auxiliary field (dimension) which then becomes the weak gravitational spacetime field after the breaking of time reversal symmetry, charge and parity, baryogenesis, axion production and the restoration of quantum chromodynamics (QCD) charge parity symmetry by the intense energy of the expanding of condensate. In this manner a scale invariant three dimensional Minkowski space is retained locally in the dynamical environment of particle collision and evolution, with an eventual cooling, reaggregation and reheating. Thus cosmic inflation represents the universal spacetime analogue of shock compression and ignition.