Holography and MHCE8S Theory: Importance of Critical Density Data and Galaxy Count Assumption

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Abstract: Agreement with Planck Collaboration critical density data and assumption of 10^27 galaxy count verifies the importance of holography in MHCE8S theory.

Starting[1] with a spherical 3-dimensional universe of radius R, we compare its volume 4/3 x pi x R^3 to that of a multiple (10^27) thin 2-dimensional disk-shaped area 4 x pi x R^2 = (4/3 x pi x R^3) / (4 x pi x R^2) = R/3. Now[2] for R = **4.1082355** x10^26 M the volume of the universe = 4/3 x pi x 4.1082355^3 = 1.3333333 x 3.1415926 = 4.18879 x 69.337147 = 290.43874 x 10^78 = 2.9043874 x 10^80 M^3. The total thin disk (gallaxy) area of the universe = (R/3)^2 = (1.3694118)^2 x 10^52 M^2 = 1.8752886 x 10^52 M^2. Now the volume of a 3-dimensional universe/total (10^27 galaxy) area of a 2-dimensional (galaxy) disk holographic universe = 2.9043874 x 10^80/1.8752886 x 10^52 = 15.487682 x 10^27.

Each disk galaxy has an area = 4 x pi x R^2/10^27 = 4 x 3.14159926 = 12.566396 x (**4.1082355**)^2 = 1.2566396 x 1.6877598 x 10^54 = 2.1209057 x 10^27. Now 15.48/2.120 = 7.30 < 8.62, and the critical density is not exceeded. For 10^28 galaxys however, the disk area decreases by X10 and 7.30 increases X10, now exceeding the critical density limit.

1. "Observable universe", Wikipedia, (2019)
2. George R. Briggs, " Small corrections to the critical density calculation in MHCE8S theory produce full agreement with Planck Collaboration data", ViXra 1901.0221, (2019)