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Density Perturbation of the Early Universe ALEISHA WARREN,
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Density Perturbation of the Early Universe

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The Cosmic Microwave Background(CMB) is the radiation that is spread throughout the universe from the early universe. The CMB is around 380,000 years old. The universe has anisotropy-it is not uniform in brightness, temperature or density. The density perturbation is the variance of densities through out the universe. Using the simulation made by Dr.David Garrison and ran on the Singularity cluster at The University of Houston at Clearlake, the density perturbation was calculated and tested. The density perturbation for today was calculated at $1.3 \cdot 10^{-14}$. Then using the code, tests were done to build a simulation where the universe was successfully made and the density perturbations resulted in the calculated value. This brings us a better understanding of the early universe. This also helps solve the initial conditions of the universe.

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