Abstract Submitted
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Mass of the Universe and the Redshift RAJENDRA GUPTA, Macronix Research Corporation — Cosmological redshift is commonly attributed to the continuous expansion of the universe starting from the Big-Bang. However, expansion models require ad hoc assumptions and multiple parameters to get acceptable fit to the observed data. The approach here considers the redshift to be a hybrid of two effects: recession of distant galaxies due to expansion of the universe, and resistance to light propagation due to an unknown cosmic drag. The weight factor determining the contribution of the two effects is the only parameter that is needed to fit the observed data. The unknown effect considered phenomenologically yields mass of the universe as 2 x 10^{53} Kg, about the same estimated by others. This implicitly suggests that the mass of the whole universe is causing the cosmic drag. The databases of extragalactic objects containing redshift and distance modulus μ of galaxies up to z=8.26 resulted in an excellent fit to the model. Also, the weight factor w_D for expansion effect contribution to μ determined from the data sets containing progressively higher values of μ can be nicely fitted with $w_D(\mu)$=0.198sin(0.4159μ+2.049)+0.2418sin(0.6768μ+5.15), which indicates that the universe may be expanding in some regions and contracting in others.

Rajendra Gupta
Macronix Research Corporation

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