

Redshift-Space Distortions in Cosmic Dust

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Recent WIMP experiments suggesting dark matter does not exist are consistent with the argument that the long-standing galaxy rotation problem may be resolved without the need for dark matter if the redshift measurements giving the higher than expected galaxy velocities are corrected for the redshift in cosmic dust. Because of the ubiquity of cosmic dust, all velocity measurements in astronomy based on redshift are most likely overstated, e.g., an accelerating Universe expansion need not exist if data showing supernovae brighter than expected based on the redshift/distance relation is corrected for the redshift in dust.

In this regard, galaxy light is shown to redshift upon absorption in NPs of cosmic dust. NPs stand for nanoparticles. In classical physics, the NP temperature increases upon absorbing galaxy light, but QM governs the nanoscale. QM stands for quantum mechanics. By QM, the atom heat capacity vanishes in NPs, and therefore the heat of galaxy light cannot be conserved by an increase in temperature. Instead, conservation proceeds by a simplified form of QED producing standing EM radiation inside the NP. QED stands for quantum electrodynamics and EM for electromagnetic. But the NP requires EM confinement for QED to convert the heat into standing EM waves, the EM confinement relying on the high S/V ratio of NPs. S/V stands for surface-to-volume. Because of the high S/V ratio of NPs, almost all of the heat of galaxy light is deposited in the NP surface thereby providing the momentary EM confinement of NP atoms necessary to create the standing EM radiation. Once the surface heat is depleted in creating the standing EM radiation, there no longer is any EM confinement and the standing EM radiation is emitted to the surroundings travelling to the Earth as QED redshifted galaxy light.

In this paper, QED redshift corrections for cosmic dust is extended to removing observational effects from spectroscopic measurements in clustering of galaxies in Redshift-Space Distortions (RSD).

Keywords— cosmic dust, QED redshift, Doppler Effect, quantum mechanics, quantum electrodynamics.