

Abstract Submitted
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Testing Conformity in the Local Group and Local Volume CHARLOTTE OLSEN, ERIC GAWISER, Rutgers University — Conformity denotes the correlation of properties e.g., star formation rate (SFR), specific star formation rate (sSFR), quenched fraction, etc. between pairs of galaxies as a function of separation. This correlation has implications for the impact of environment upon galaxy formation and evolution. Conformity between central galaxies and satellites within the same dark matter halo has been well documented both in simulations and observations. However, the existence of conformity at much greater distances – known as two-halo conformity – remains uncertain. Olsen et al. (2021) found synchronized star formation in star formation histories of Local Volume dwarf galaxies. Since these galaxies are separated by as much as 8 Mpc, the cause of this apparent co-evolution is unclear. We investigate whether this sample, combined with Local Group galaxies, reveals two-halo conformity by examining sSFR, SFR, stellar mass, and quenched fraction as a function of physical separation. Making use of the star formation histories of these galaxies, we then extend this analysis back in time by up to 6 Gyr to offer the first probe of conformity through cosmic time.

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