MBT – Sandage–Loeb Redshift Drift Test

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# Overview

This document presents the results of the Sandage–Loeb redshift drift test for the MBT (Motion = Being Theory) cosmological model. The test evaluates how redshift changes over time for distant objects, which is sensitive to the rate of cosmic expansion and the nature of time itself. Unlike supernovae or BAO fits, redshift drift directly probes the geometry of time and expansion.

# Key Result

The MBT model shows a strong correlation with predicted redshift drift trends under ΛCDM at low redshift, diverging naturally at higher redshifts. This divergence is smooth and physically plausible, reflecting MBT’s interpretation of time dilation due to accumulated motion and expansion dynamics.

# Interpretation

- At low z, MBT and ΛCDM match closely, supporting compatibility with current observations.  
- At higher z, MBT gently diverges — this is not failure, but meaningful deviation based on a different foundation.  
- MBT does not introduce spikes or discontinuities, but instead reveals a gradual shift in how time and expansion interact.

# Scientific Significance

Redshift drift is one of the cleanest tests for any time-based cosmological model. MBT’s prediction tracks ΛCDM where it must, but departs in a testable way. This gives MBT a credible alternative identity, not just as a rebranding of existing models, but as a hypothesis rooted in the geometry of time and motion.

# Next Steps

Future comparisons with redshift drift measurements from next-gen observatories (like ELT or SKA) could help confirm or refute MBT’s distinct predictions. This makes the Sandage–Loeb test a crucial observable for testing MBT’s long-term scientific value.