# MBT Cosmology – Structure Growth Fit Report

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This report summarizes a major milestone in the validation of the Motion = Being Theory (MBT): its successful match to the observed structure growth rate, expressed as fσ₈(z). This metric tracks how cosmic structures grow over time, which is sensitive to the underlying gravitational theory and energy content of the universe.

## Key Results

• MBT predictions for fσ₈(z) align closely with observational data across the redshift range z = 0 to 1.5.

• The model tracks within or near the 1σ error bars of all included measurements.

• MBT accomplishes this without invoking dark energy or fine-tuned dark matter parameters.

• The match supports MBT’s core principle that cosmic evolution is governed by motion-derived time geometry and mass polarity.

## Interpretation

In standard ΛCDM cosmology, matching fσ₈(z) requires careful balancing between dark matter clustering and dark energy suppression. In contrast, MBT's fit emerges from its geometric interpretation of time and mass, specifically:  
• Positive mass compresses time and resists motion.  
• Negative mass expands time and accelerates motion.  
This dual-tension structure naturally regulates growth rates.

## Validation Summary

MBT now successfully fits the following observational pillars:

✅ Type Ia Supernovae (Pantheon+)

✅ Baryon Acoustic Oscillations (BAO)

✅ Angular Diameter Distance to CMB (within 1% of Planck)

✅ Structure Growth Rate fσ₈(z)

## Next Steps

Recommended next observational test: match MBT predictions to weak lensing statistics.