CORRECTING SUPERNOVA LUMINOSITY FOR REDSHIFT IMPLIES NO ACCELERATED EXPANSION

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ABSTRACT

Existing analysis of Type Ia supernova relies on the assumption that luminosity is not affected by redshift. However, when luminosity is corrected for redshift, the relationship between luminosity distance and redshift for Type Ia supernova becomes linear. This implies that the expansion rate of the universe is not accelerating and there is no need for dark energy to explain observational data.

Keywords Cosmological Parameters · Dark Energy · Luminosity Distance

1 Introduction

TODO: Discuss Riess et al. [1998], Perlmutter et al. [1999], and Perlmutter and Schmidt [2003], as well as their nobel prize, summarizd in Straumann and Zürich [2012].

Summarize dark energy. Emphasize that dark energy is a popular explanation for why distant supernova appear to be too far away.

Talk about the difficulty of curating supernova data, and summarize the work done by Betoule et al. [2014].

2 Derivation of luminosity distance

Luminosity distance, D_L, is

$$G = \sqrt{\left(s_i + \frac{s_j p_j}{p_i}\right)\left(s_j + \frac{s_i p_i}{p_j}\right)} = \frac{s_i p_i + s_j p_j}{\sqrt{p_i p_j}}. \tag{1}$$

3 Calibrated distance models

4 Discussion of discrepancy

5 Conclusions

What the heck?

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