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## Some problems associated with the standardization of the light curve of type 1a supernovae

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We show that the parameters used to standardize the luminosity of Type 1a supernovae in the SALT2 and SiFTO models depend strongly on the redshift z. Consequently, when standardized with increasing z, the average absolute magnitudes of Type 1a supernovae are artificially increased. This means that for a given apparent magnitude they are, on average, assigned larger distances than they actually are, creating the appearance of their recession with acceleration and requiring the introduction of the concept of antigravity (dark energy) to explain it. We also show that standardizing the luminosity of Type 1a supernovae violates the fundamental assumption that Type 1a supernovae are distance standards. We therefore argue that such a standardization is not suitable for measuring the distances to Type 1a supernovae, and hence the accelerating expansion of the Universe is called into question.

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