

The impact of the elemental abundances of the galaxies hosting SNIa over the Hubble diagram

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Abstract

The metallicity of the progenitor system producing a Supernova type Ia could play an important role in the estimate of the maximum luminosity of the explosion. This dependence should change the calibration between the light curve parameters of SN Ia and its absolute magnitude. To test this idea, we apply the metallicity dependent theoretical calibration (Bravo et al. 2010, ApJ, 71, L66) to a sample of 42 SNe Ia in the range $z \leq 0.4$ selected from the existing data of Sloan Digital Sky Survey (SDSS) for which we have estimated the elemental abundances. We analyze the impact over the absolute magnitude determined for the SN Ia and over the Hubble diagram. For details see Mollá et al. (2012, in preparation) and references therein.