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Spectrophotometric standardisation of ZTF-SEDm type Ia supernova sample

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Type Ia Supernovae (SNe Ia) are standardisable candles used to measure cosmic distances from their nearly constant maximum luminosity. Standardisation methods have been developed to reduce intrinsic scatter and improve distance estimates. Traditional photometric method reaches a ~0.15 mag precision, but the SNFactory (SNf) survey has suggested that a spectroscopic approach can reach ~0.07 mag.
We test for the first time the spectroscopic method called the Twins Embedding (TE) using an other survey. The Zwicky Transient Facility (ZTF) spectra sample has around 700 spectroscopic SNe from the spectrograph SEDm, four times larger than SNf for the same selection cuts. During the talk, I will present results of the TE applied to ZTF sample. We show that a first standardisation of ZTF SNe reach a 0.155 mag dispersion and ~0.1 mag for the bluest. We will discuss the robustness of the method and its limits.

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