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**Cosmological distance measurement of 12 low  $z$  IIP Supernovae using Expanding Photosphere Method** GOVINDA DHUNGANA, ROBERT KEHOE, Southern Methodist University, ROTSE COLLABORATION — Supernova (SN) cosmology has matured remarkably over the past decade. While SNe of Type Ia has been the most strongly studied, more recently, interest is growing to use Type II SNe as standardizable candles. SN II physics is better understood and several studies have presented strong correlations in the photometric and spectroscopic observables that establish these as equally viable cosmological distance indicators. It is particularly important to build multiple analysis frameworks to use these events now as their discoveries sky with the advent of deeper surveys. We present an analysis on distance measurement of 12 nearby SNe IIP ( $z < 0.06$ ) observed by ROTSE-III telescopes, using the Expanding Photosphere Method (EPM). The EPM is a geometrical method that relies on the approximation that the SN explosion is isotropically symmetric, and the photosphere behaves as a diluted blackbody. We derive the distance of 12 nearby events and show that our measurement is consistent with the standard  $\Lambda$ CDM framework. By establishing an empirical model of temperature evolution and using alike for velocity evolution, this study demonstrates that this approach yields competitive measurements as other methods, even when the data is limited to one or few epochs.

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