中華民國天文學會
The Astronomical Society of the Republic of China (Taiwan)

Contribution ID: **146** Type: **Poster**

THE EVOLUTION OF TYPE IA SUPERNOVAE WITH THEIR EJECTA VELOCITIES

Type Ia supernovae (SNe Ia) play a central role in cosmology, yet increasing evidence suggests they are not a fully uniform population. While most studies of SN ejecta velocities are from the Si II λ6355 absorption line, the Ca II H&K feature—likely formed in the different layers of SN ejecta—may offer a different perspective on explosion dynamics and progenitor diversity. In this study, we investigate how Ca II H&K velocities vary with different parameters, such as redshift, pseudo-equivalent width (pEW), and host galaxy environment, comparing them to trends observed in Si II velocities across multiple SN Ia samples (DES, PS1, SDSS, and SNLS). Our objective is to determine whether Ca II H&K can reveal additional diversity or trends not evident from Si II alone and to assess its potential as a complementary probe in understanding SN Ia physics.

Section

Stars/Star Clusters

Primary author: GUPTA, Shubham

Presenter: GUPTA, Shubham

Session Classification: Poster-Stars