

The stellar populations of host galaxies of supernovae

X. Shao^{1,2,3,4}, Y. C. Liang^{1,3}, M. Dennefeld⁵, X. Y. Chen^{1,3},
 G. H. Zhong^{1,3}, F. Hammer⁶, L. C. Deng^{1,3}, and B. Zhang^{1,4}

¹National Astronomical Observatories, CAS, 20A Datun Road, 100012, Beijing, PR China
 email: xshao@bao.ac.cn

²University of Chinese Academy of Sciences, 19A Yuquan Road, 100049, Beijing, PR China

³Key Laboratory of Optical Astronomy, NAOC, 20A Datun Rd. 100012, Beijing, China

⁴Department of Physicals, Hebei Normal University, Shijianzhuang 050016, China

⁵Institut d'Astrophysique de Paris, CNRS, 98bis Bd Arago, F-75014 Paris, France

⁶GEPI, Observatoire de Paris-Meudon, 92195 Meudon, France

Abstract. We study and compare the stellar populations of host galaxies of different types of supernovae (SNe): SN Ia and core collapse SN (SN II and SN Ibc) at the same time. The 234 sample galaxies are selected by cross-matching the Asiago Supernova Catalogue (ASC) and the SDSS-DR7 main galaxy sample (MGS). The STARLIGHT software is used to analyze their stellar populations by fitting the continua and absorption lines of the hosts.

Keywords. galaxies: evolution, galaxies: star formation, galaxies: starburst

We performed cross-matching on the ASC and the SDSS-DR7 MGS with 30 arcsec radius to select supernova host galaxies. We select galaxies for which the light-fraction (see details in Liang *et al.* 2010) of their SDSS spectral observations are > 0.15 to ensure that the 3 arcsec fiber can cover most of their global light. In total 234 SN host galaxies are selected, which are divided into two subsamples: emission-line galaxies and absorption-line galaxies. We fit the stellar continua and absorption lines of the hosts using Starlight (Cid Fernandes *et al.* 2005, Chen *et al.* 2009). The results are shown in Table 1. Among the 137 emission-line galaxies, the fraction of young stellar populations is higher in hosts of SN II than in hosts of SN Ia and Ibc. Most of the 97 absorption-line galaxies host a SN Ia, and they have a large fraction of old stellar populations. The 137 hosts with emission lines contain much younger stellar populations.

Table 1. The contributed light fraction of stellar populations in age-bins for SN host galaxies.

hosts of	emission-line galaxies			absorption-lines galaxies		
	SN Ia	SN II	SN Ibc	SN Ia	SN II	SN Ibc
Young (<0.2Gyr)	30.2	56.5	22.2	12.5	26.8	25.8
Intermediate (0.2-2Gyr)	42.2	31.5	51.6	28.0	30.1	39.2
Old (>2Gyr)	27.6	12.0	26.2	59.5	43.1	35.0

Acknowledgements. The authors thank the symposium organizers for their invitation to this poster. This work was supported by the Natural Science Foundation of China (NSFC) Foundation under Nos.10933001, 11273026.

References

- Chen, X. Y., Liang, Y. C., Hammer, F. *et al.* 2009, *A&A*, 495, 457
 Cid Fernandes, R., Mateus, A., Sodre, L. *et al.* 2005, *MNRAS*, 358, 363
 Liang, Y. C., Zhong, G. H., Hammer, F. *et al.* 2010, *MNRAS*, 409, 213