

ABSTRACT ONLY

CAII TRIPLET METALLICITIES IN THE SMC - STAR CLUSTERS VS. FIELD STARS.

M.C. Parisi^{1,2}, D. Geisler³, J.J. Clariá^{1,2}, S.
Villanova³, L. Gramajo^{1,2}, G. Carraro⁴, A.
Sarajedini⁵ and A. Grocholski⁶

We present new results based on VLT Ca Triplet (CaT) medium resolution spectroscopy of some 200 red giant members of 29 SMC intermediate - old age clusters. We derive mean cluster velocities to a few km/s and mean metallicities to 0.05 dex. We also derive accurate velocities and metallicities for about 750 surrounding field giants. We investigate the metallicity distribution, age-metallicity relation and metallicity gradient in great detail for the SMC using this large and homogeneous database. We find a number of interesting results and some surprising differences between the clusters and fields. The clusters display a likely bimodal metallicity distribution while the field stars are unimodal. The clusters show no strong evidence of a metallicity gradient while the field stars show a strong negative gradient in the inner region of the galaxy that appears to reverse sign in the outer region. The difference between the cluster metallicity and the mean of the surrounding field stars is a strong function of the cluster metallicity. The age-metallicity relation of the clusters shows a significant intrinsic metallicity dispersion at all ages, and no satisfactory fit to any current chemical evolution model. We discuss these results and their implications for the formation and evolution of the SMC.

¹ Observatorio Astronómico de Córdoba, Argentina.

² CONICET, Argentina.

³ Universidad de Concepción, Chile.

⁴ European Southern Observatory, Chile.

⁵ University of Florida, USA.

⁶ Louisiana State University, USA.
