The Impact of Large-Scale Surveys on Pulsating Star Research
ASP Conference Series, Vol. 203, 2000
L. Szabados & D. W. Kurtz, eds.

New Pulsational Constraints to the Distance of Globular Clusters and the M_V(RR)–[Fe/H] Relation

Vincenzo Ripepi

Osservatorio Astronomico di Capodimonte, Napoli, Italy

Filippina Caputo

Osservatorio Astronomico di Capodimonte, Napoli, Italy

Vittorio Castellani

Dipartimento di Fisica, Universitá di Pisa, Italy

Marcella Marconi

Osservatorio Astronomico di Capodimonte, Napoli, Italy

Abstract. We applied the *pulsational* method (Caputo 1997) to derive the distances to a sample of galactic globular clusters with well-observed RR Lyrae populations. To apply the method we calculated a set of pulsational theoretical boundaries of the instability strip for the range of masses and chemical compositions spanned by the analysed clusters. In this way we were able to fix simultaneously the apparent distance modulus and the absolute visual magnitude of the RR Lyrae population of each cluster in the sample. As a result we derived the following relations:

$$M_V(\mathrm{RR}) = (1.01 \pm 0.02) + (0.25 \pm 0.02) \times [\mathrm{Fe/H}]$$
$$M_V(\mathrm{ZAHB}) = (0.92 \pm 0.03) + (0.26 \pm 0.02) \times [\mathrm{Fe/H}].$$

Reference

Caputo, F. 1997, MNRAS, 184, 994