A SYNOPTIC VIEW OF THE MAGELLANIC CLOUDS:
VMC, GAIA AND BEYOND

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The metallicity dependence of Cepheid period-luminosity relations

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As part of an ESO Large programme, we have collected radial velocities and NIR photometry of a large sample of SMC Cepheids. These data have been used to derive very precise individual distances to the Cepheids using the Infrared Surface Brightness Technique, and obtain their absolute magnitudes in optical and near-infrared bands. The resulting period-luminosity relations in the SMC were compared with those for Cepheids in the LMC and Milky Way derived with the same method, and the effect of metallicity on the PL relations was determined in a strictly differential, zero-point independent way. This, together with the large metallicity baseline of almost 0.8 dex has led to a very precise determination of the metallicity effect on Cepheid luminosities whose knowledge is crucial for a precise determination of the Hubble constant from the empirical Cepheid - SN Ia method.