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# Estimating interstellar extinction towards elliptical galaxies and star clusters

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**Abstract.** The ability to estimate interstellar extinction is essential for color corrections and distance calculations of all sorts of astronomical objects being fundamental for galactic structure studies. We performed comparisons of interstellar extinction models by Amores & Lépine (2005) that are available at: http://www.astro.iag.usp.br/˜amores. These models are based on the hypothesis that gas and dust are homogeneously mixed, and make use of the dust-to gas ratio. The gas density distribution used in the models is obtained from the gas large scale surveys: Berkeley and Parkes HI surveys and from the Columbia University CO survey. In the present work, we compared these models with extinction predictions of elliptical galaxies (gE) and star clusters. We used the similar sample of gE galaxies proposed by Burstein for the comparison between the extinction calculation methods of Burstein & Heiles (1978, 1982) and of Schlegel et al. (1998) extending the comparison to our models. We found rms differences equal to 0.0179 and 0.0189 mag respectively, in the comparison of the predictions of our "model A" with the two methods mentioned. The comparison takes into account the "zero points" introduced by Burstein. The correlation coefficient obtained in the comparison is around 0.85. These results bring to light that our models can be safely used for the estimation of extinction in our Galaxy for extragalactic work, as an alternative method to the BH and SFD predictions. In the comparison with the globular clusters we found rms differences equal to 0.32 and 0.30 for our models A and S, respectively. For the open clusters we made comparisons using different samples and the rms differences were around 0.25.

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