

Re: methodology/chapter 2 edits

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To: Lisboa-Wright, Alexander <A.LisboaWright@2017.ljmu.ac.uk>; Bastian, Nathan <N.J.Bastian@ljmu.ac.uk>;

Hi Alex,

here are the main comment. Please re-read everything being careful about the logic of your exposition.

i) You write:

Figure 1.2 shows that the difference between absolute monochromatic stellar flux for different effective temperatures itself varies significantly as a function of wavelength. Therefore, when the distance to a star is unknown, a simple photometric flux measurement alone cannot easily distinguish the effect on the flux due to the intrinsic nature of the star from effects due to distance or extinction. This observational problem must therefore be mitigated before an accurate value of the extinction can be determined. The mitigation is carried out by calculating bolometric corrections.



What is the purpose of this paragraph? It seems you are talking about T_{eff} . But then why are you mentioning the distance? It has nothing to do with colours as diagnostics of T_{eff}

Then you say you need to know extinction... not clear to do what... then you say you need to calculate bolometric corrections I suppose to calculate extinctions.

All of this I'm afraid is obscure for a general reader. What are you trying to say?



ii) Please, do not start from bolometric corrections in your discussion about the calculation of A_X/A_V . I said this even in the last e-mail. if you want to discuss how extinction affects stars of different T_{eff} and $\log(g)$, you need to start with your equation 2.1. A difference between m_X given by Eq. 2.1 with A_{λ} equal to a generic value minus the case of $A_{\lambda}=0$. will give you the extinction in the photometric band X corresponding to your chosen A_{λ} (and A_{λ} is a function of A_V in the interstellar extinction curve).

But you want to explore how A_X/A_V varies along isochrones, because you wish to assess the effect on isochrone fitting. Therefore you need to start from the bolometric luminosity given by the isochrones. This is the logical sequence. So, link M_{bol} to M_x and then introduce the bolometric corrections, showing at this point that you can determine your sought A_X/A_V ratios from the calculation of the bolometric corrections.



You need bolometric corrections because you want to determine the variation of A_X/A_V along a theoretical isochrone. This is the crucial point to make clear in the thesis

iii) When you mentioned isochrones, remind the reader that you will use them to assess the effect of variable extinction ratios on CMD fitting



iv) Remind the reader why you need stellar model atmospheres



v) isochrone data fitting should be Isochrone CMD fitting



vi) What is (A_X/A_V) plot in Sect. 2.5?



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