

## COLOURS AND $T_{EFF}$ OF MAIN SEQUENCE STARS COVERING THE GALACTIC METALLICITY RANGE

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**Abstract.** We present the results of a general programme aimed to study the effects of metallicity on the temperature scale of late main sequence stars (F0-K5). A sample of approximately 400 stars with published UBV(RI) and  $ubvy - \beta$  photometry has been collected from the literature. A three years campaign of observations (Alonso et al. 1994b) was carried out to obtain JHK photometry in order to apply the InfraRed Flux Method (IRFM) to derive effective temperatures. The effect of metallicity on Colour-Colour IR diagrams is discussed. The absolute flux calibration in the IR was revised in Alonso et al. (1994a). The effect of metallicity on the bolometric correction has been studied in Alonso et al. (1995) in order to derive bolometric fluxes. The temperatures have been derived by applying the IRFM using new Kurucz models.  $T_{eff} = f(\text{Colours}, [Fe/H], \log(g))$  relations are obtained for dwarfs covering the ranges  $4000K \leq T_{eff} \leq 8000K$ ,  $3.5 \leq \log g \leq 5.00$ ,  $+0.5 \leq [Fe/H] \leq -3.00$  which expands considerably the database of previous works. These relations are used to check atmosphere models through the analysis of  $UBVR IJHKubvy - \beta$  synthetic photometry in combination with the IRFM. The transformation from the theoretical HR diagram into an observational one is analyzed with the new relations. The influence of these points on the study of the evolution of the Galaxy is briefly discussed.

### References

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