

TOWARDS A COMPLETE LIBRARY OF STELLAR SPECTRA FOR EVOLUTIONARY SYNTHESIS

F. CUISINIER ¹, TH. LEJEUNE ², R. BUSER ¹

¹ *Astron. Inst. Univ. Basel, Switzerland*

² *Obs. Strasbourg, France*

The population and evolutionary synthesis of the integrated light of clusters and galaxies requires a good knowledge of the underlying stellar spectra. Libraries of observed stellar spectra can be used, but they have several disadvantages, e.g. uneven sampling — which causes problems in the integration phase. Furthermore, no comprehensive library of low- or high-metallicity stars does exist, which would be required to model chemical evolution. Libraries of synthetic spectra could — and should — solve these problems. Using Kurucz and more recent libraries dedicated to cool stars, we constituted a library covering the whole range of T_{eff} : 50 000 – 2500 K.

The comparison between empirical and model computed temperature-colors relations shows differences that are too big to allow to use the cool synthetic spectra as such. We therefore developed a method to modify the synthetic spectra, in order to allow them to fit the observed temperature-colors relations.

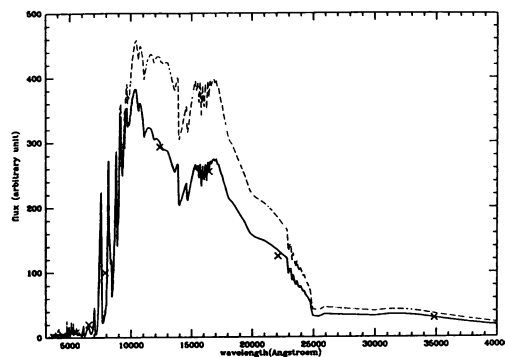


Figure 1. Original and modified spectrum at $T_{\text{eff}} = 3126\text{K}$. The crosses show the empirical fluxes in the UBVRIJHKL bands at this temperature.