

## A multipurpose 3-D grid of stellar models

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### Abstract

The last two decades have produced a proliferation of stellar atmosphere grids, evolutionary tracks, and isochrones which are available to the astronomical community from different internet services. However, it is not straightforward (at least for an inexperienced user) to manipulate those models to answer questions of the type: What is the spectral energy distribution of a 9000 K giant? What about its  $J$ -band magnitude for different metallicities? What can I tell about the mass of a star if I know that its unreddened  $B - V$  color is  $-0.05$  and its luminosity in solar units is  $10^5$ ? The answers to those questions are indeed in the models but a series of transformations and combinations involving different variables and models are required to obtain them. To make the available knowledge more user friendly, I have combined a number of state-of-the-art sources to create a 3-D (effective temperature, luminosity, and metallicity) grid of stellar models for which I provide calibrated SEDs and magnitudes as well as auxiliary variables such as mass and age. Furthermore, I have generated a grid of extinguished magnitudes using the recent Maíz Apellániz et al. (2012) extinction laws and incorporated them into the Bayesian code CHORIZOS (Maíz Apellániz 2004).