## The 13th Torino Workshop on AGB stars & the 3rd Perugia Workshop on Nuclear Astrophysics



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## PARSEC V2.0: Stellar tracks and isochrones of low and intermediate mass stars with rotation

Wednesday, 22 June 2022 14:35 (5 minutes)

We present a new comprehensive collection of stellar evolutionary tracks and isochrones for rotating low- and intermediate-mass stars assembled with the updated version of PARSECV2.0. The recent calibration of the extra mixing from overshooting and rotation is included, as well as several improvements in nuclear reaction network, treatment of convective zones, mass loss and other physical input parameters. The initial mass that we present are from 0.09 Msun to 14 Msun, for six sets of initial metallicity from Z=0.004 to 0.017. Rotation is considered only above about 1 Msun, with a smooth transition between non rotating and extremely fast-rotating models, based on the initial mass. Above about 1.3 Msun the full range of rotation from low to the critical, is considered. The solar-scaled chemical mixture by Caffau et al. is adopted with Zsun = 0.01524. All the evolutionary phases from the pre-main-sequence to the first few thermal-pulses on the asymptotic-giant-branch (TP-AGB) or central C exhaustion.

The corresponding theoretical isochrones are derived with TRILEGAL code and are converted into several photometric systems with the accounting for different inclination angles due to rotational effects.

The new collection is fully integrated in a user friendly WEB interface for the benefit of easily performing stellar population studies and will be provided.

## Session

Stellar observations (photometry and spectrometry)

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