

Asteroseismology of pulsating subdwarf B stars using TESS data

Subdwarf B (sdB) stars are extreme horizontal branch stars, consisting of a convective helium burning core, helium shell and a very thin (in mass) hydrogen envelope. Few of these sdBs pulsate (sdBV), which opens the window to study these stars using asteroseismology. From the TESS mission, we have detected a few tens of rich gravity mode sdBVs by analysing their lightcurves and periodograms and identified their pulsation mode geometries. Our mode identifications are based on asymptotic period spacing technique. Along with lightcurve analysis, we have done spectroscopic observations and analysis for few of these stars to determine their physical parameters like effective temperatures and surface gravities. We also compared these asteroseismic and spectroscopic results with our sdB evolutionary models to determine the evolutionary status of these sdBVs.

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