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SEEING THE INSIDE OF STARS WITH SOUND

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In this talk, we introduce photometric mode identification formula for pulsating stars. By considering radiative transfer equations, appropriate physical conditions and mathematical formulations, we derive a formula that describes the effect of pulsations in the light output of pulsating stars. For this formulation, we took into consideration the interaction of light with the different layers of the atmosphere of the star. For non-radially pulsating stars, the calculation we did show the dependence of the variation in the observed luminosity on the surface area, surface normal and variation in temperature.

We used the theories and principles introduced by Watson (1987, 1988), Medupe (2009) and studied photometric mode identification to introduce an alternative way of deriving theoretical photometric mode identification formula. We also demonstrate the effect of pulsation in the light output of a pulsating star. As a result, the calculation we did show the dependence of the variation in the observed luminosity on the surface area, surface normal and variation in temperature caused by nonradial pulsation.

Key words: Mode identification; Photometry; Pulsating Stars; Radial and Nonradial Pulsation; Radiative transfer equations; Flux perturbations

Apply to be considered for a student ; award (Yes / No)?

No

Level for award;(Hons, MSc, PhD, N/A)?

N/A

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