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INTERFACE BETWEEN ASTRONOMY AND AI: FINDING GDOR/DSCT HYBRIDS WITH TESS  
AND MACHINE LEARNING

**Abstract**

Gamma Doradus / Delta Scuti hybrid pulsating stars are relatively rare main sequence stars with g- and p-mode oscillations. Their importance for stellar astrophysics comes from their variability enabling the studies of both near-core and outer stellar regions. The detection of hybrids received a major boost from space observatories, finding many new candidates within the astronomical surveys, while also creating a demand for robust methods handling learning problems with class imbalance.

This study outlines our improved methodology for identifying hybrid pulsators across the entire frequency range within the TESS dataset, using QLP light curves alongside a Positive Unlabelled (PU) Learning bagging classifier. We conclude that PU Learning can retrieve  $\gamma$ Dor /  $\delta$ Sct hybrids with a high recall and discover potential hybrid pulsating stars for further studies. We are then going to discuss how we establish a probabilistic threshold on PU classification by artificially enriching the unlabelled set with known non-hybrids.