

# EXPLAINING ZZ CETI OUTBURSTS BY PARAMETRIC INSTABILITY

Keaton J. Bell

*NSF Astronomy & Astrophysics Postdoctoral Fellow  
DIRAC Institute, Department of Astronomy, University of Washington*

Extensive time series photometry of ZZ Ceti (pulsating hydrogen-atmosphere white dwarf) variables from Kepler/K2 revealed an outburst-like phenomenon that is common near the cool edge of the instability strip. Outbursts cause up to 40% brightness increases, recurring irregularly on timescale of days to months. This unexpected behavior can be explained by a parametric instability model, where driven pulsation modes transfer energy into the convection zone, heating the photosphere and disrupting the pulsations. I present an update on the observational properties of the ensemble of known outbursting ZZ Ceti, and I show how each observable is consistent with the parametric instability model. This talk aims to provide satisfying closure to the mystery of outbursting pulsating white dwarf stars that has been presented and discussed at recent EuroWD Workshops.