

Abstract Submitted
for the TSS09 Meeting of
The American Physical Society

Neural networks for automated classification of eclipsing binary stars KATHERINE LEAVECK, SHAUKAT GODERYA¹, BERT LITTLE, Tarleton State University — Advances in observational astronomy have given astronomers the opportunity to conduct sky surveys capable of collecting terabytes of data nightly. Photometric observation of stars has drastically increased the number of known variable stars to a point where traditional object-by-object analysis is not feasible. Using artificial neural networks for data mining, data reduction and analysis is of great interest to astronomers who now have more data readily available than any person or team could analyze in a lifetime. This poster presents initial efforts to build a scheme to automatically classify light curves of eclipsing binary stars using Fourier descriptors and artificial neural networks. The raw data was obtained from available public domain databases. A FORTRAN code was written to compute the Fourier descriptors, which are presented as inputs to the neural network for training and classifying the light curves.

¹Mentor

Katherine Leaveck
Tarleton State University

Date submitted: 13 Mar 2009

Electronic form version 1.4