

Using Machine Learning to Predict the Correlation of Spectra Using SDSS Colour Magnitudes as an Improvement to the Locus Algorithm

Eugene Hickey, Oisin Creaner, Kevin Nolan, and Tom O’Flynn

Highlights

- Differential photometry performs best when comparison stars have similar spectra to the target star.
- Correlations between stellar spectra can be estimated using colour magnitude values.
- The application of machine learning models leads to an improvement in colour matching stellar spectra compared to previous implementations of the Locus Algorithm.
- Stars classified as Cataclysmic Variables performed poorly in these models. This is connected to the presence of strong emission lines in their spectra.