

Abstract Submitted
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Detection of Correlations in Stellar Isotopic Abundances¹ K.A. THOMSEN, Tennessee Technological University, M.S. SMITH, Oak Ridge National Laboratory Physics Division — The composition of a star changes with time via sequences of thermonuclear reactions. These sequences strongly couple the abundances of all elements to each other. The resulting complex interdependencies often make it difficult to ascertain which isotopic abundances most influence one another. To investigate this, a FORTRAN program has been written which analyzes these abundances over time as predicted by a simulation to determine if they may be correlated. This is accomplished via a looping over all possible pairs of tracked isotopes, quantitatively ascertaining the shapes of the abundance versus time curves for each, and assigning numerical scores to determine if these pairs of curves are correlated, anticorrelated, or uncorrelated. Preliminary results from this study will be presented.

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