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Versatile Continuum Normalization for Precise Spectral Measurements with the Habitable-Zone Planet Finder[1] FREJA OLSEN, ADAM ICKLER, RYAN TERRIEN, ALLY KEEN, KATY ODA, Carleton College — The abundances of certain metals in stars can tell us much about the properties of the star and the exoplanets it hosts. Abundances are measured by measuring the depths of spectral absorption lines below the continuum. For M dwarf stars, it is difficult to identify a consistent continuum level due to the complexity of their spectra. To get accurate measurements we need to normalize the continuum and devise ways for determining precision. I wrote a program that normalized the spectrum so that it was consistent for all stars and tested the precision of the resulting measurements by performing statistical analysis on frequently observed stars and finding distribution for the equivalent widths found. This created usable methods for preparing new spectra for analysis and determining uncertainties for new lines that greatly reduce the time needed for finding equivalent widths of spectral lines to be used for determining abundances.

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