Automated spectral classification of Kepler's Supernova Remnant STEPHEN REYNOLDS, KAZIK BORKOWSKI, TIMOTHY CANTY, North Carolina State University — The study of Kepler's Supernova Remnant gives astrophysicists a unique look into the details of supernovae. As Kepler's Supernova Remnant appears to be an unordinary thermonuclear remnant, the identification of spectrally unique regions could reveal insights into the mechanisms behind the event. Using observational X-ray data from the Chandra X-ray Observatory, we devised an automated method of classification, to identify areas of the image with unique spectroscopic properties. Although this data has already been manually evaluated, results of the clustering attempts show that there are unique features that a manual method may have missed. The automated results agree with previous studies into the supernova, and suggest that the presence or absence of magnesium may play a significant role in uncovering the details of the supernova event.

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