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# Applying Dendrograms to Astronomical Imaging

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## Abstract

In this contribution, I will describe how dendrograms have been used to characterize astronomical images. Dendrograms provide a compact representation of the contour structure within images, making them a simple, data-driven abstraction method for representing images with complex structure. I will show how dendrograms have been used for locating compact sources superimposed on background emission. Next, I will show how the dendrogram representation provides a basis for efficient identification of molecular clouds using the PHANGS dataset. Finally, I will present how dendrograms have been used for cataloguing molecular clouds in well-resolved data using spectral clustering methods with the SCIMES algorithm (Colombo et al., 2015, 2019).

**Keywords:** Molecular Clouds: Image processing

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