GETSF: A Multi-Scale Multi-Wavelength Method for Extraction of Sources and Filaments in Astronomical Images using Separation of their Structural Components

Alexander Men'shchikov[*1]

[1]Department of Astrophysics – CEA Saclay, 91191 Gif-sur-Yvette Cedex, France – France

Abstract

This talk will present *getsf*, a new method for extracting sources and filaments in astronomical images using separation of their structural components, designed to handle multi-wavelength sets of images and extremely complex filamentary backgrounds. The method spatially decomposes the original images and separates the components of sources and filaments from each other and from their backgrounds and flattens the residual noise and background fluctuations in the two components. Then it decomposes the flattened components of sources and filaments, combines them over wavelengths, and detects the positions of sources and the skeletons of filaments. Finally, it measures the properties of the detected sources and filaments and creates the output catalogs and images. The method has a single user-definable free parameter, the maximum size of the structures of interest.

Keywords: methods, extraction, sources, filaments, structures, backgrounds

---

[*]Speaker