Sparse wavelet expansions for an inverse problem in Astrophysics

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Abstract

This talk presents joint work with Sandrine Anthoine and Elena Pierpaoli. It concerns the separation of astronomical images into different components: galaxies, galactic dust, cosmic background radiation and stars, based on observations at different light frequencies. We use an ℓ^1-constraint to promote sparse wavelet representation of the galaxy component; the results are compared with a different wavelet-based approach.