

学术报告

Non-Negative and Sparse Tensor Factorization Based Hyperspectral Image Super-Resolution

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Venue: Room 112, Center for Applied Mathematics

Abstract: Hyperspectral image (HSI) super-resolution refers to enhancing the spatial resolution of a 3D image with many spectral bands (slices). It is a seriously ill-posed problem when the low-resolution (LR) HSI is the only input. It is better solved by fusing the LR HSI with a high-resolution (HR) multispectral image (MSI) for a 3D image with both high spectral and spatial resolution. In this talk, I will introduce a novel non-negative 4D tensor dictionary learning based HSI super-resolution model using non-local similarity and group-block sparsity. By grouping similar 3D image cubes into clusters and then conduct super-resolution cluster by cluster using 4D tensor structure, we not only preserve the structure but also achieve sparsity within the cluster due to collection of similar cubes. We use 4D tensor Tucker decomposition and impose non-negative constraint on the dictionaries and group-block sparsity. Numerous experiments demonstrate that the proposed model outperforms many state-of-the-art HSI super-resolution methods.

欢迎大家参加！