

1040-49-41

Peter Jones and **Triet M Le*** (triet.le@yale.edu), 10 Hillhouse, 442 Dunham Lab., New Haven, CT 06511. *Local Scales and Multi-Scale Image Decompositions.*

The knowledge of local oscillations in images is important for image decompositions. Motivated from the Triebel-Lizorkin function spaces, we provide a tool for studying local scales in images using the heat and the Poisson kernels. Some properties and characterizations of these local scales will be discussed. We then use the knowledge of local scales for a multi-scale image decomposition. (Received January 11, 2008)