

# Hat Average Multiresolution with Error Control in 2-D

Multiresolution representations of data are a powerful tool in data compression. For a proper adaptation to the singularities, it is crucial to develop nonlinear methods which are not based on tensor product. The hat average framework permits develop adapted schemes for all types of singularities. In contrast with the wavelet framework these representations cannot be considered as a change of basis, and the stability theory requires different considerations. In this paper, non separable two-dimensional hat average multiresolution processing algorithms that ensure stability are introduced. Explicit error bounds are presented.

**Key Words.** Stability, hat average, multiresolution, non separable.

**AMS(MOS) subject classifications.** 41A05,41A15.