

Beyond Wavelets: NORMAL OFFSETS beating WAVELETS

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1. Conclusions

- ✓ Faster approximation for line singularities (Edges, Contours) than wavelets!
- ✓ Sparse representation i.e. many zeros \Rightarrow good for compression

2. Applications

- Compression
- Noise reduction

3. Properties of the Target Images

- Smoothly colored regions separated by smooth contours: $2 \times$ smooth!

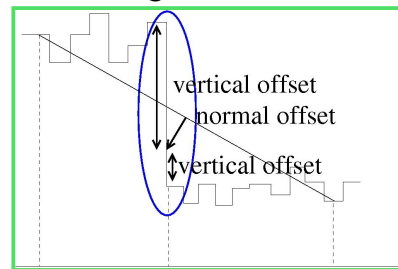
$2 \times$ smooth \Rightarrow use Normal Offsets



Texture \Rightarrow use Wavelets

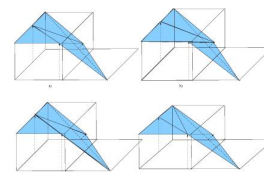
4. Basic Concept

- Image \rightarrow $2\frac{1}{2}$ D Surface
- Construct an initial base mesh
- Search for an intersection (piercing point) between the normal on each edge and the image surface



Mesh triangle & original image surface

- Among the possible interconnections between the piercing points determine the *best* one



4 possible interconnections

- Go back to step 3 till convergence

5. Preview



Approximating $2\frac{1}{2}$ D mesh

Adaptive triangulation towards contours in the XY-plane



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Further information

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