Procedural Texturing and Modeling

Image References

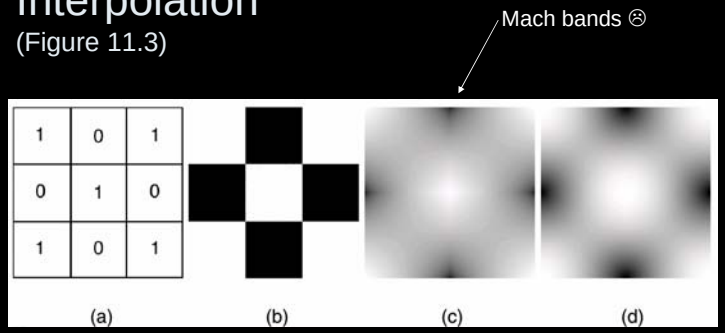
- Shirley, Sections 11.1 & 11.5
- Images from *Ebert et al., "Texturing and Modeling: A Procedural Approach," Morgan Kaufmann Publishers, 3rd ed., 2003.*

Noise?

"Blessed State," by F. Kenton Musgrave

Interpolation

(Figure 11.3)



Pixels | Nearest-neighbor | Bilinear | Hermite

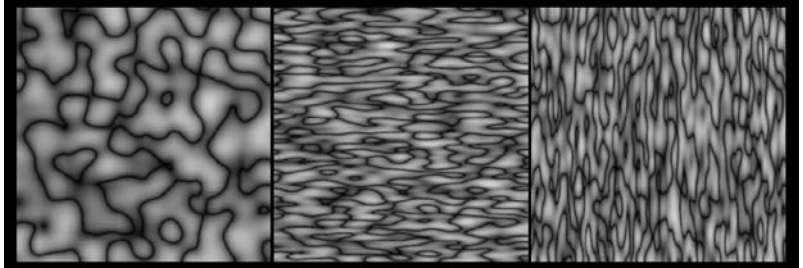
Solid Noise

(Figure 11.5)

0.5 (noise + 1)

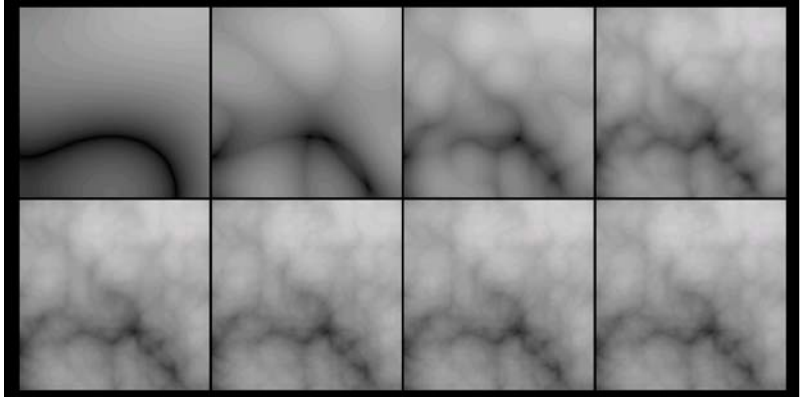
0.8 (noise + 1)

Absolute value of solid noise
(Figure 11.4)



| noise(x,y) | | noise(x,4y) | | noise(4x,y) |

Turbulence
(Figure 11.6)



Design

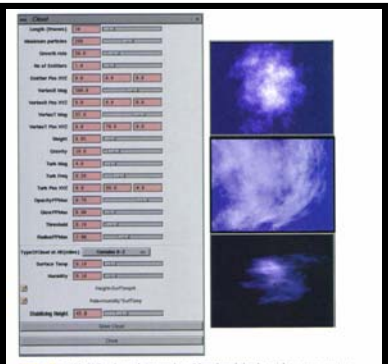
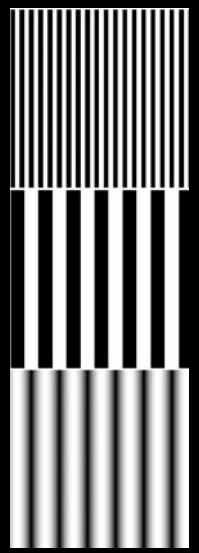


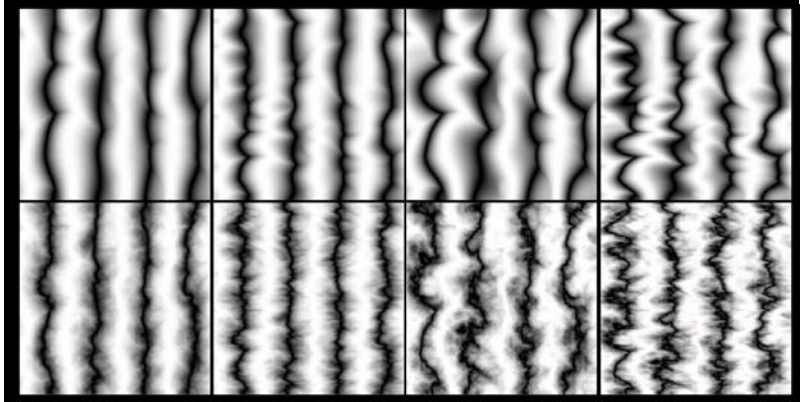
FIGURE 8.11 MEL GUI and sample images from Maya-based cloud particle system generator.

FIGURE 8.12 An example cloud rendering from a Maya plug-in. Image created by Marlin Rowley.

Stripes
(Figure 11.1)



A Turbulent Stripe
(Figure 11.7)



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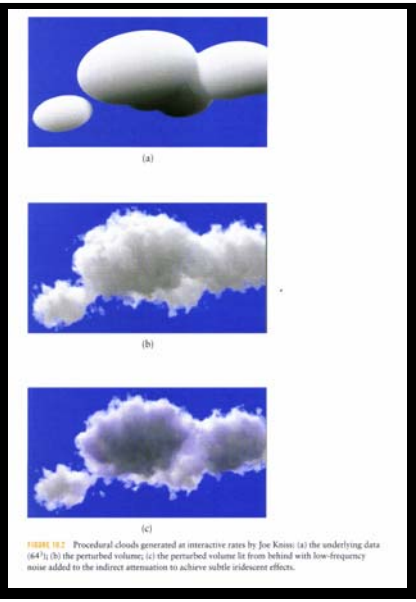
Clouds



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Bump Textures
(vector turbulence)

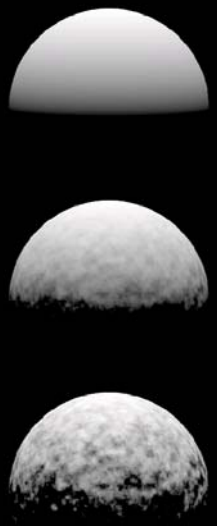

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Figure 11.3

Ridges

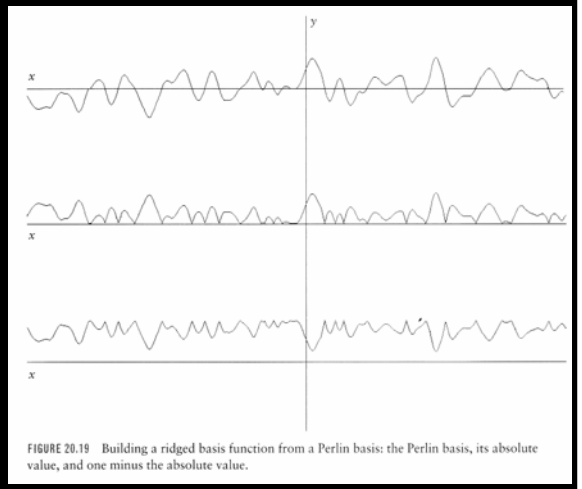

FIGURE 20.19 Building a ridged basis function from a Perlin basis: the Perlin basis, its absolute value, and one minus the absolute value.

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Terrain

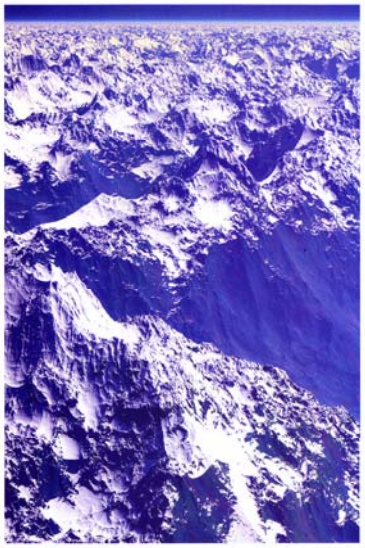

FIGURE 16.3 *Himalayas* shows color perspective over a long distance. Note that the white peaks turn red, while the dark areas turn blue with distance. Copyright © F. Kenton Musgrave.