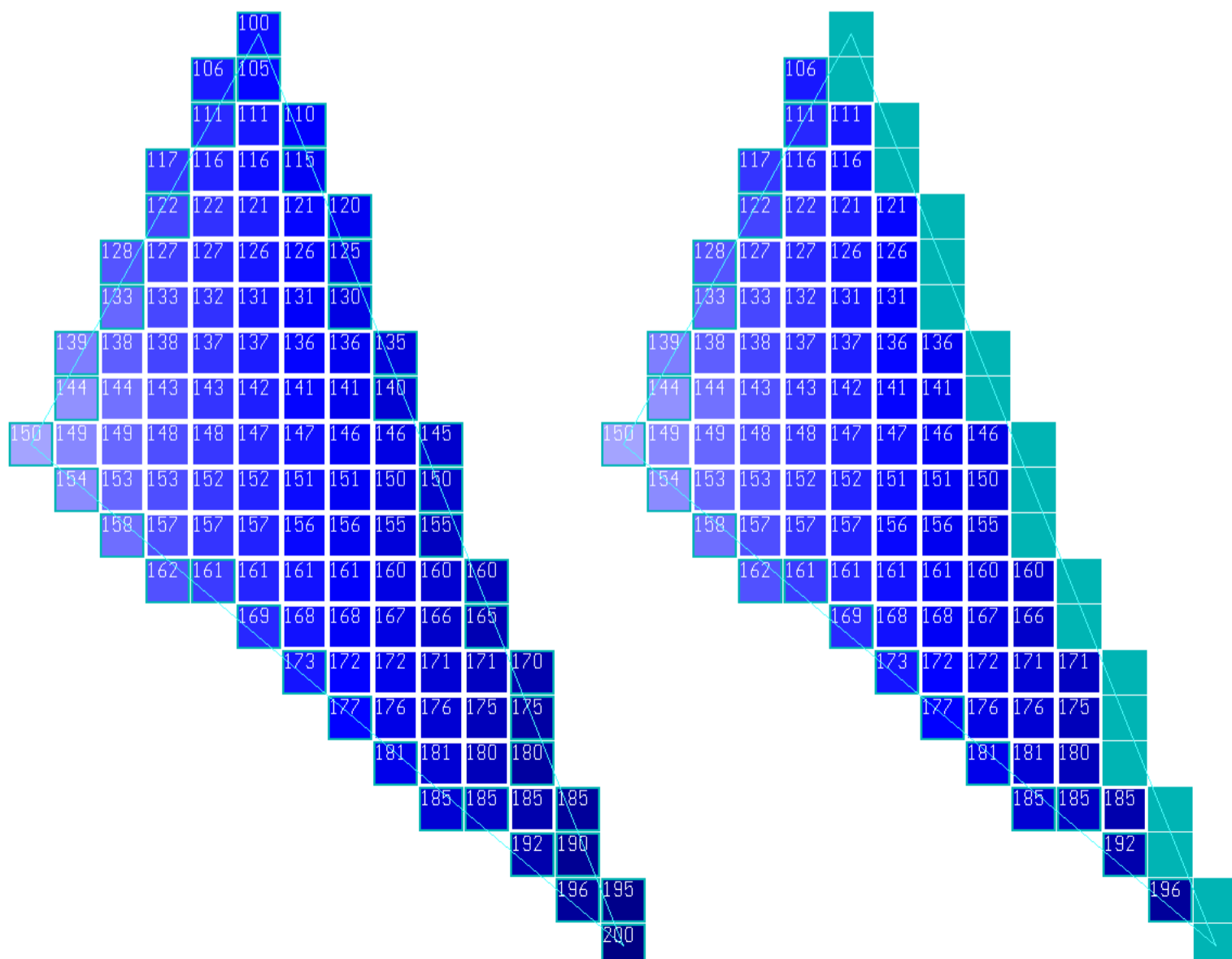


Rendering Triangles

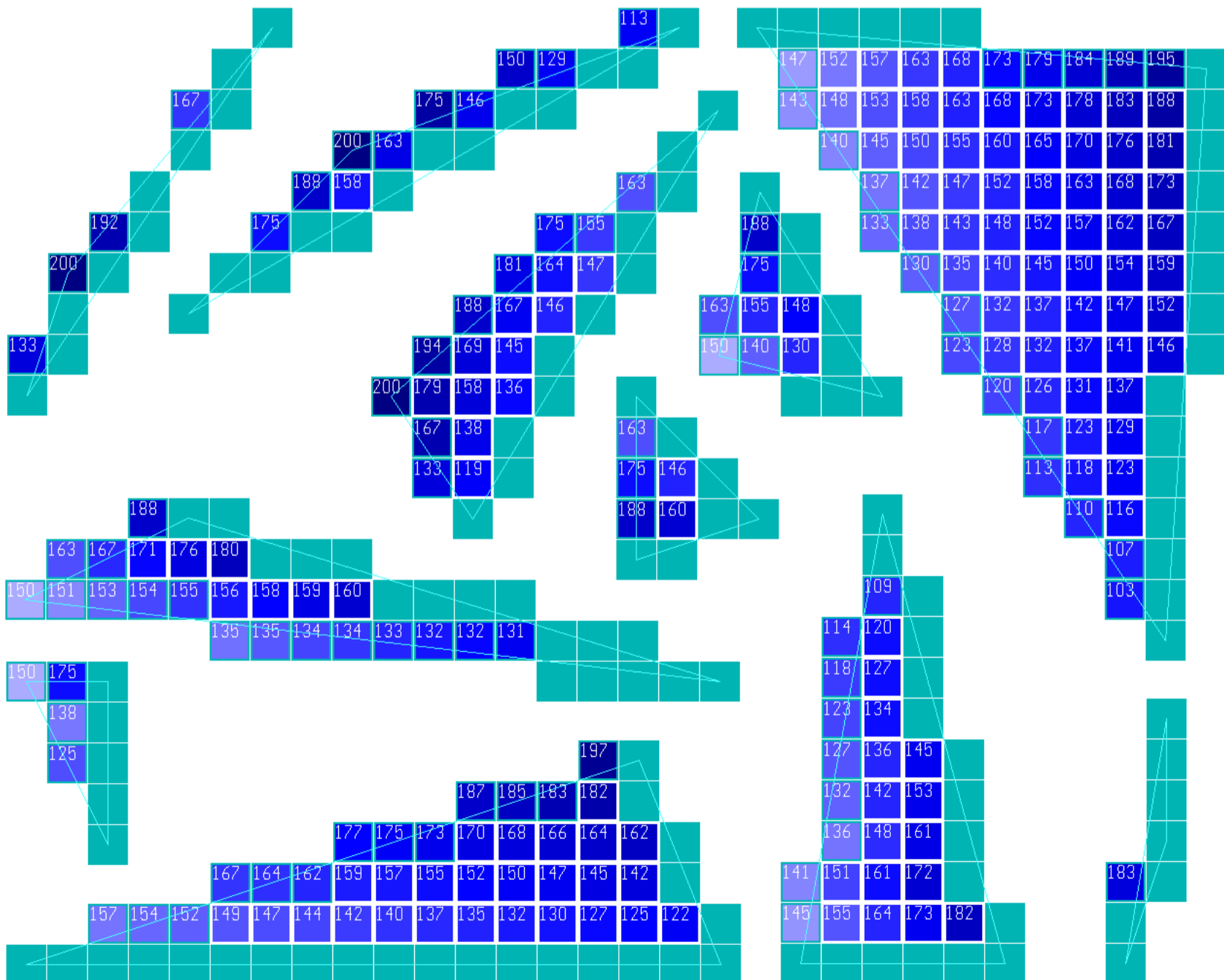
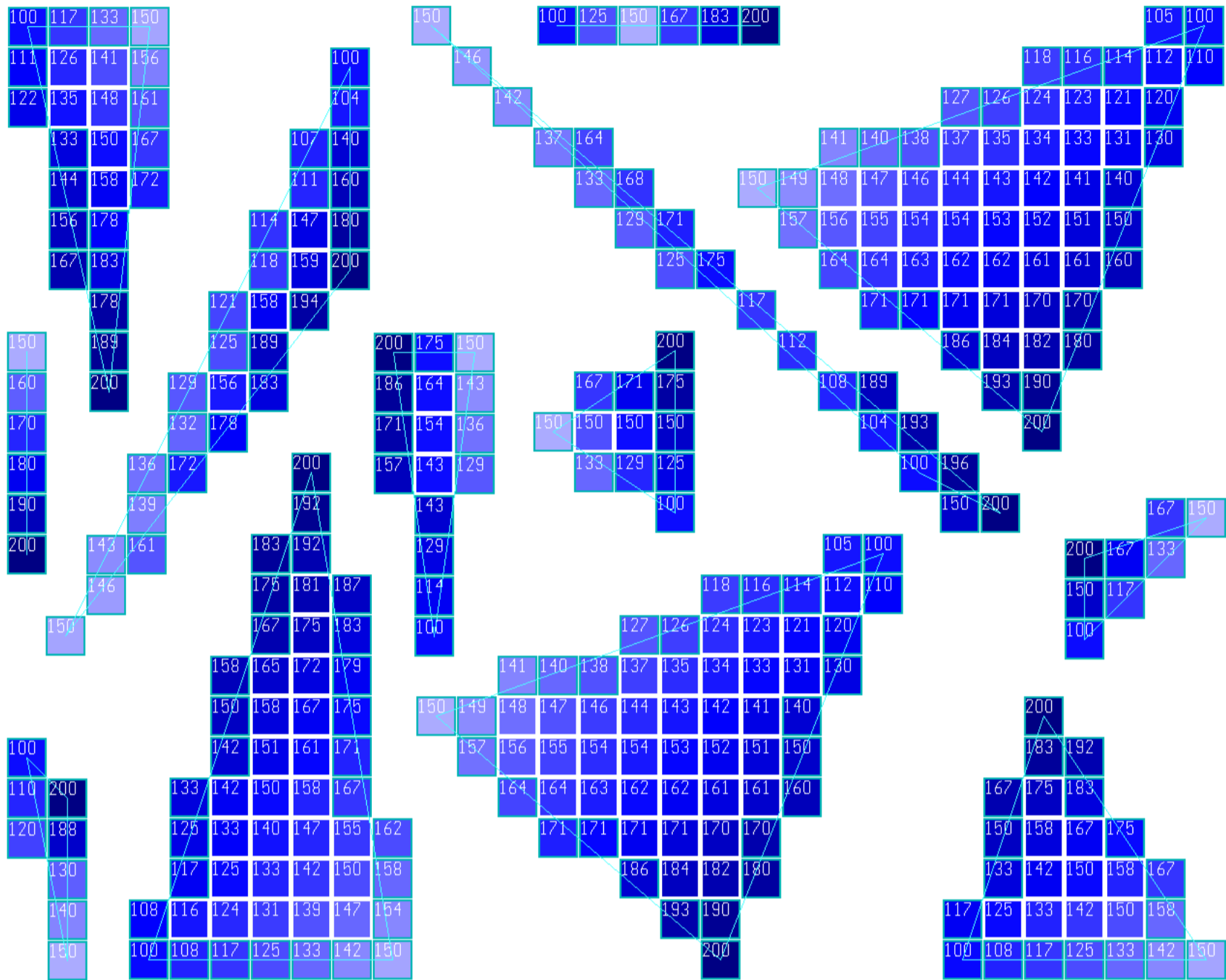
Please use for Acrobat zoom 200% and resolution 72 dpi

Surface triangles of a 3D object are mapped to a 2D raster device. Each corner carries information about the color RGB (3 Byte) and the distance in the object space by z-Buffer depth (4 Byte float). The triangles are filled by scanlines. Colors and depth are interpolated along the edges and for the scanline from left to right. Colors are interpolated as scaled integers, depth is interpolated float. The scanline algorithm is rather complex because of many special cases of triangles. Many pixels can be omitted in consistent meshes. The renderer creates about one million pixels per second by software (PC 400MHz).

- Outlined boxes: Pixel at edge, found by line algorithm
- Blue boxes: Pixel shows color interpolation
- Numbers: Number shows depth interpolation
- Cyan boxes: Pixel, not drawn in consistent meshes

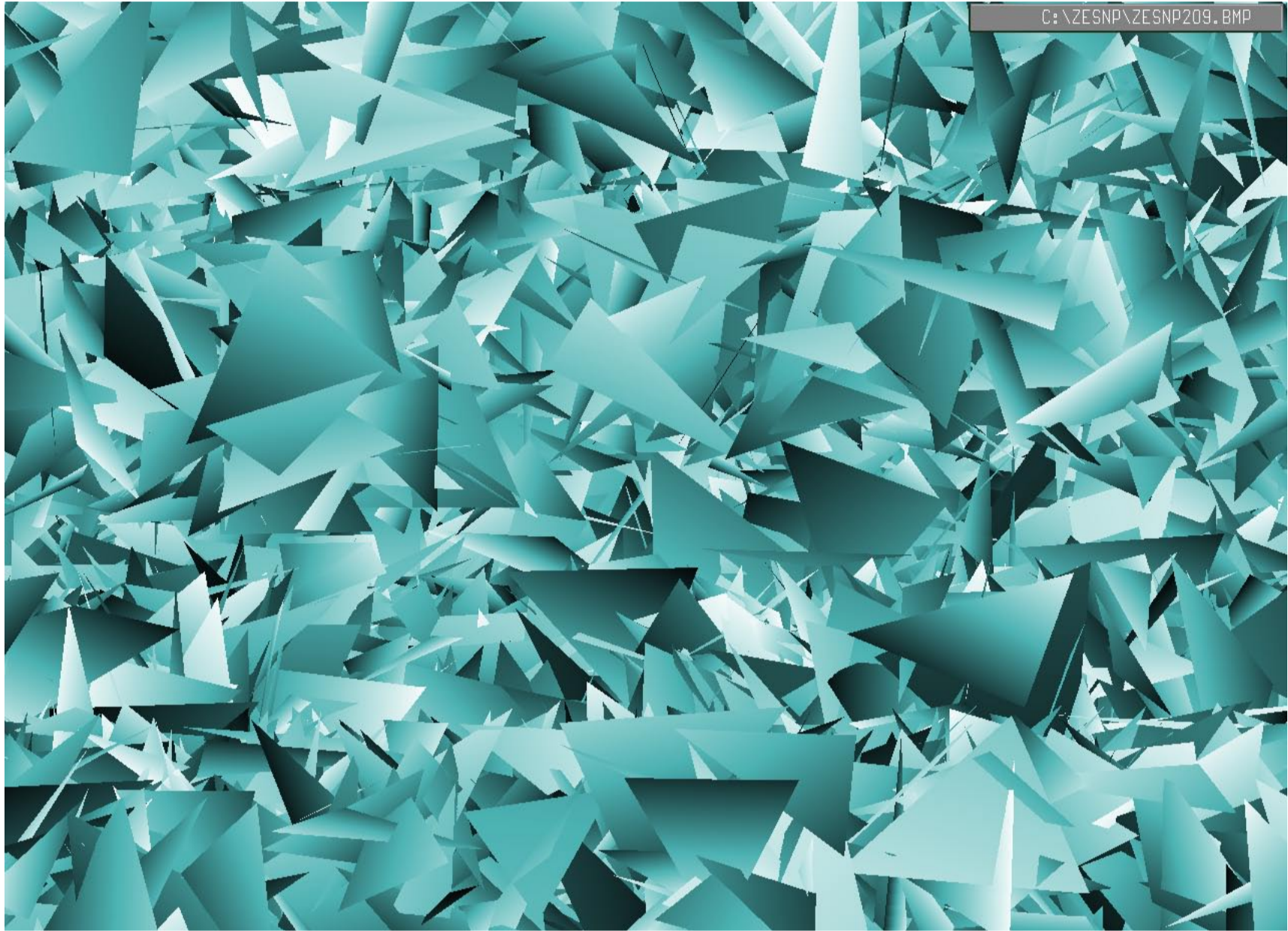


Rendering Triangles



Rendering Triangles

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This doc:

<http://docs-hoffmann.de/triangle04122001.pdf>

Gernot Hoffmann

December 04 / 2001 — February 17 / 2013

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