Rendering Tutorial 9

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Assigment 1

Use a fractal combination of Worley noise values to create a “crumpled paper” effect:

$$G_1(u,v) = \sum_{i=0}^{N} \frac{1}{2^i} F_1(2^i(u,v))$$

The result should look like the image on the left below when used as a texture.

What is the cause of the line artifacts you see? How can they be fixed? If you find the right answer, the result should look like the middle image below.

Of course the crumple effect is not intended to be used as a texture directly. Instead, it is better interpreted as a bump map. Create a normal map from it using the function `bumpMapToNormalMap()` from `import.hpp`, with a bump factor of 16 and a virtual size of 256×256 as parameters (as a starting point; feel free to experiment).

The result might look similar to the image on the right below.

A basic implementation of Worley noise is included in the tutorial material, together with the example scene.