<https://libguides.bournemouth.ac.uk/creative-technology/books>

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Source | Source overview | Quote / Idea | Page | Analysis |
| AutoBiomes: procedural generation of multi-biome landscapes (Roland Fischer) | Details how to create a terrain that features multiple biomes. This is done my using a pipeline that first, generates a basic plane with noise, then applies a weather simulation, and finally adds some biome specific features, decided based on the temperature and altitude. | Numerous algorithms for PTG have been proposed which can be roughly categorized into three types: synthetic, physics-based and example-based approaches | 1 | There are 3 different known ways of generating terrain with their own benefits and drawbacks |
| Terrain generation using noise is very popular, because it is easy compared to other approaches and the computational effort low. Drawbacks are the inherently unintuitive way to adjust noise parameters and consequently, the difficulty to create genuinely realistic looking terrain | 2 | Although a popular and well used technique, noise is difficult to use, and takes a significant amount of refinement and tuning to make realistic looking terrain |
| Rendering Parametrizable Planetary Atmospheres with Multiple Scattering in Real-Time (Oskar Elek) | Talks about how to create an atmosphere for a 3d planet, viewable both inside and outside of that planet. The technique uses a precomputed lookup table to ease the computation, and then renders it to the gpu. This is a PBR approach, and would also add the star of that system if this approach is followed. |  |  |  |
| Real-Time Rendering of Planets with Atmospheres | Similar approaches detailed in the paper above, but also features a more in-depth description and research, and features sudo code to help with implementation |  |  |  |
| Delaunay+Voronoi on a sphere | Briefly talks about an implementation method for creating a Fibonacci sphere using some pre-existing libraries |  |  |  |
| Four Ways to Create a Mesh for a Sphere | Briefly talks about 4 different ways to render a sphere (UV, normalize cube, spherified cube and icosahedron). Doesn’t mention Fibonacci, does however feature pseudocode for all discussed models |  |  |  |
| Procedural Generation of 3D Planetary-Scale Terrains (Ryan J. Vitacion, Li Liu) | Discusses the performance and viability of several different types of noise (value, cubic, Perlin, simplex and diamond square) and see how they would work inside a 3d vr environment for defining a planets surface. |  |  |  |
| Smooth View-Dependent Level-of-Detail Control  and its Application to Terrain Rendering (Hugues Hoppe) | Discusses how to do LOD, using geomorphs, and applying vspluts and ecols to complicate or simplify the geometry of a mesh. |  |  |  |