

# SPG-Project

Based on my EZG-project.

## Controls

W	Move forward
A	Move left
S	Move backward
D	Move right
Mouse X	Control camera yaw
Mouse Y	Control camera pitch
Q	Rotate camera roll anticlockwise
E	Rotate camera roll clockwise
F1	Reset camera roll
F2	Toggle wireframe
F4	Toggle free-cam/cinematic-mode
Comma	Reduce speed
Period	Enhance speed
Strg comma	Reduce sample count (antialiasing)
Strg period	Enhance sample count (antialiasing)
Alt comma	Steps- -
Alt period	Steps++
Alt strg comma	Finesteps- -
Alt strg period	Finesteps++
Shift comma	Particle Update-rate--
Shift period	Particle Update-rate++
Esc	Quit game

## Important program segments

almost everything of interest is found in the Chunk-class or the ParticleSpawn-class, a little bit in the main-loop. Additionally, there are 7 shader files of interest:

generateChunk\_CS.glsl : generating the density volume.

Chunk\_VS.glsl

Chunk\_GS.glsl : rendering pipeline, containing the marching cubes algorithm.

Chunk\_FS.glsl

Chunk\_FS.glsl : displacement mapping.

ChunkRay\_CS.glsl : parallel computation of Ray-relevant voxels.

Particle\_VS.glsl

Particle\_GS.glsl : rendering pipeline, containing particle stuff.

Particle\_FS.glsl