

Floating in the Wind

Story/Description

Our demo will display an abstract scene of particles flying with the wind above rough terrain. The camera will follow the particles while music is playing in the background. In response to the music, the lighting dims, fireworks set off and the movement of the particles change.

Technology

The current project is based on the "model_loader" demo of Auto-VK-Toolkit. For now nothing has changed from the proposal.

- Programming language: C++
- Graphics API: Vulkan
- Framework(s): Auto-VK-Toolkit
- Libraries: no additional libraries besides the toolkit

Development status

Effects

- GPU Particle System (implemented with compute shader)
- Adaptive Tessellation (not implemented)
- Dynamic Environment Mapping (implemented with geometry shader, projection is calculated but currently not mirrored correctly)

Tested on

- NVIDIA GeForce RTX3070
- NVIDIA GeForce RTX4070

Controls

The demo currently contains an orbit- and a quake-camera for debug purposes that can be controlled via the mouse and keyboard (WASD, Shift). The quake-camera can be enabled via the GUI. While it is enabled, a camera path can be started by pressing "c" and stopped by pressing "left_shift + c".

In release mode, the GUI is disabled and the camera path is started automatically.