Avalanche Simulation in a Particle System

As a part of the Master - Module 3D-Animation in the Hochschule Rhein Main purely written in Python and OpenGL

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ABSTRACT

Avalanche A natural dreaded force of many snow and ice particles rushing down a Slope, driven by the Gravity. As many as snowflakes and ice particles which are included in an avalanche as good as we can play with them in an Particle System. One of the best examples for dynamicly rendered simulations for Particle Systems a snow Avalanche will be the central Part in our Project.
In order also to start just from the basics we decided to not use huge frameworks and start from the OpenGL Scatch. We will just use OpenGL Basics.

We will solve some Physically based Problems which comes around with the Topic of an Avalanche like:
- Particles with seperated masses, driven by a force.
- Physically Effects, bouncing Particles and combining ones.
and some OpenGL based Problems like:
- shadow for every seperated Particle
- performance Issues and optimization.

Keywords

ACM proceedings; LaTeX; text tagging

1. INTRODUCTION

The Timeline of Avalanche Simulation is as big as the benefit we get from this simulations. With the help of this Simulation protection ramparts can be build and avlanche breakers can put in the optimal position. Not only usefull aspects of Avalanche Simulation should be mentioned, also the esthetic Aspect is a huge one in 3D-Animation.