

March. 4th: MSc Exam



MORTEN BENDIKSEN

Rapid Modeling of Geology

Monday, March 4th 2013 at 10h00 (!)

Room 3137, Høyteknologisenteret
(datablokk), 3th Floor, Thormøhlensgate 55



The examination starts with a public presentation of the thesis by the candidate followed by a public Q&A session. **Welcome!**

Abstract:

Drawing three dimensional models of geological phenomena is today a process requiring training in specific programs that can be very time consuming. For illustration and communication of geological concepts, geologists therefore often limit themselves to drawing on paper or to two dimensional drawing applications. In this thesis I propose an approach for making rapid geologic illustrations in 3D. The novel idea for the approach consists of sketch based input on a cube in order to create a layered geological structure. Further details can be added to the layers by sketching geological concepts such as rivers, mountains and valleys. Sedimentary deposits can be created through a procedural modeling approach that employs a volume preserving diffusion algorithm to simulate the flow of depositional material on top of the terrain. Awareness of the geologic domain enables a sparse amount of input strokes to be interpreted into geological structures. Results show that the proposed approach can be used with success to model geological layers. Compared with a 2D sketch, the creation of a 3D geometry on a computer gives advantages such as perspective control, ease of making changes to the model, etc. The approach shows great promise and can be useful in many situations. A program based on the proposed approach could become a standard way for geologists to draw their illustrations.

