

# Progress Report

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A Procedural, Minimal Input, Natural Terrain Plug-in for Blender

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## 1 Previous Short Term Objectives:

Read the two terrain geometry papers [2, 3] again to gain a better understanding of the algorithms. Become comfortable with L<sup>A</sup>T<sub>E</sub>X and its features.

## 2 Progress:

After discussion with Kevin Glass it was decided that [2, 3] were unsuitable references due to lack of references and publication, but more importantly algorithms were lacking in explanation and complexity. Two other papers were suggested [1, 4]. After thorough examination a presentation of [1] is being made to the VRSIG during the progress meeting (15 March 2007). [1] presents much of what was suggested in [2] in terms of erosion, but defines it better mathematically and uses a fractal basis in opposition to what [3] suggested without any motivation.

Problems with L<sup>A</sup>T<sub>E</sub>X involving referencing were resolved, as well as paragraph styling. The concept of non-WYSIWYG seems to have been overcome and the features of L<sup>A</sup>T<sub>E</sub>X especially regarding references and citations become clear.

A basic research website with a self-designed PHP-based blogging system, has been written and is available for viewing at research website <http://www.cs.ru.ac.za/research/g04a1664/>. It includes very little detail at the moment, but can easily be expanded.

## 3 Problems:

None.

## 4 Objectives for Next Week:

### 4.1 Reading

Read [4] and determine whether to incorporate it with [1] algorithmically. Will [4] provide any extra, desirable features?

### 4.2 Website

Expand on website, especially regarding project content: make project proposal available, include a few pictures and a brief description of what is to be accomplished.

### 4.3 Blender

Implement terrain generation as detailed in [1].

## References

- [1] F. K. Musgrave, C. E. Kolb, and R. S. Mace. The synthesis and rendering of eroded fractal terrains. In *Proceedings of the 16th annual conference on Computer graphics and interactive techniques*, pages 41–50. ACM Press, 1989.
- [2] Jacob Olsen. Realtime procedural terrain generation: Realtime synthesis of eroded fractal terrain for use in computer games, 2004.
- [3] Teong Joo Ong, Ryan Saunders, John Keyser, and John J. Leggett. Terrain generation using genetic algorithms. In *GECCO '05: Proceedings of the 2005 conference on Genetic and evolutionary computation*, pages 1463–1470, New York, NY, USA, 2005. ACM Press.
- [4] Przemyslaw Prusinkiewicz and Mark Hammel. A fractal model of mountains with rivers. In *Proceeding of Graphics Interface '93*, pages 174–180, Toronto, Ontario, May 1993.