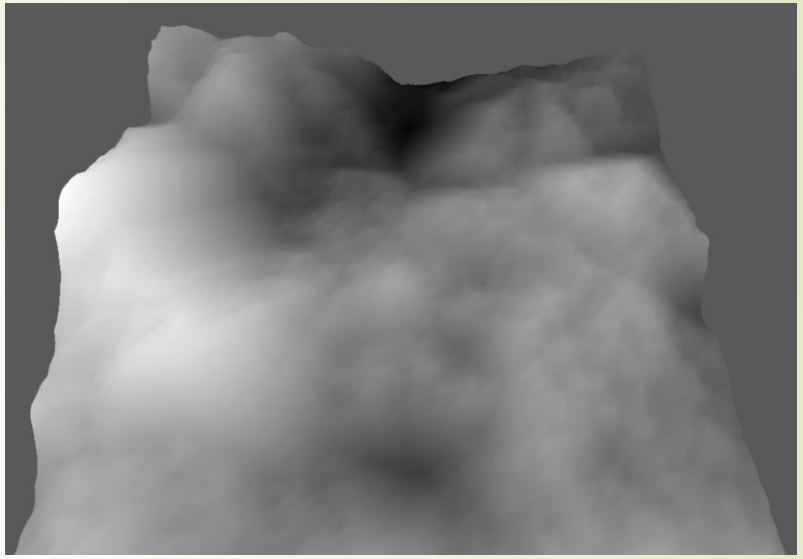
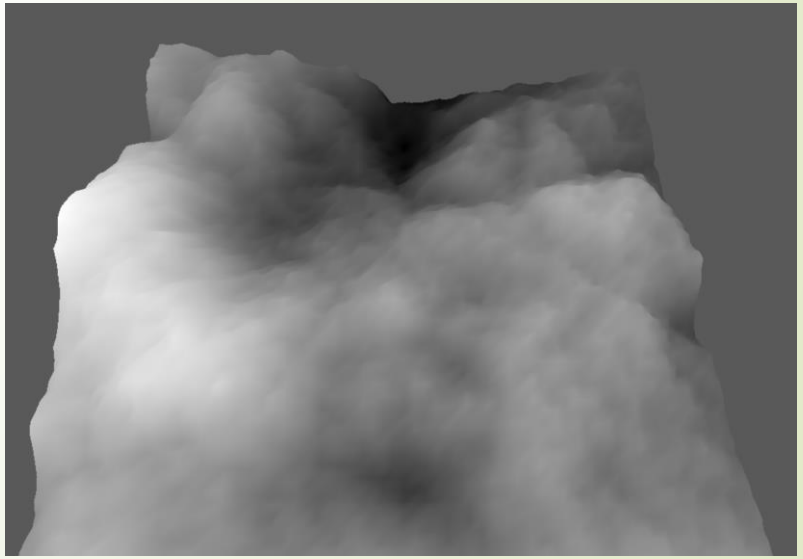
Realtime Procedural Terraion Generation

Harry Pan

Thermal Erosion

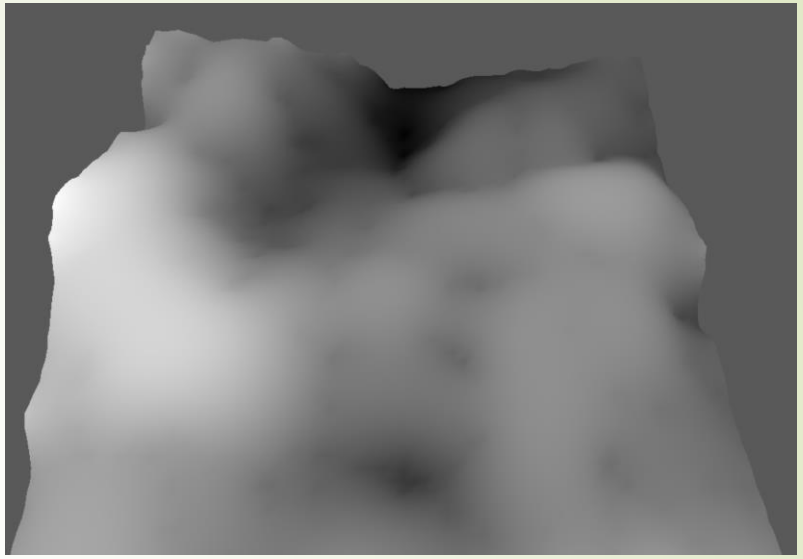
- Thermal erosion simulates material braking loose and sliding down slopes to pile up at the bottom. This can be achieved by distributing the materials of each cell to it's lower neighbors.
- The image in upper right shows the result of 100 iterations.

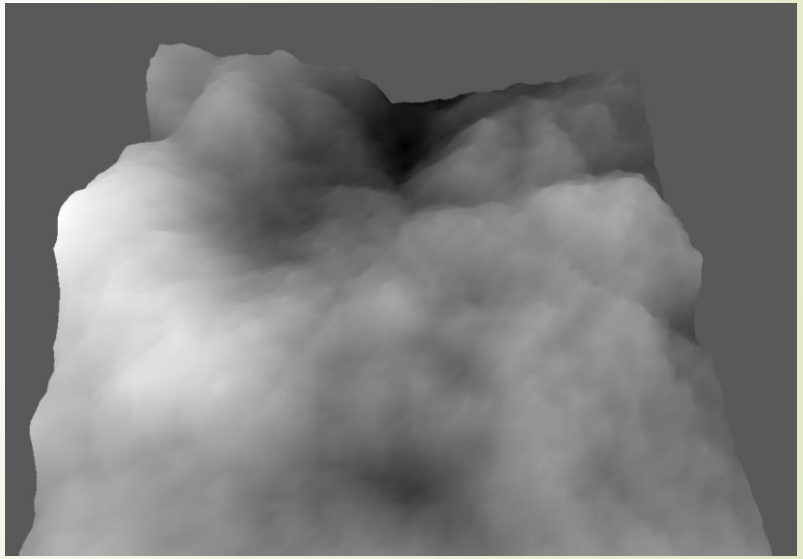




Hydraulic Erosion

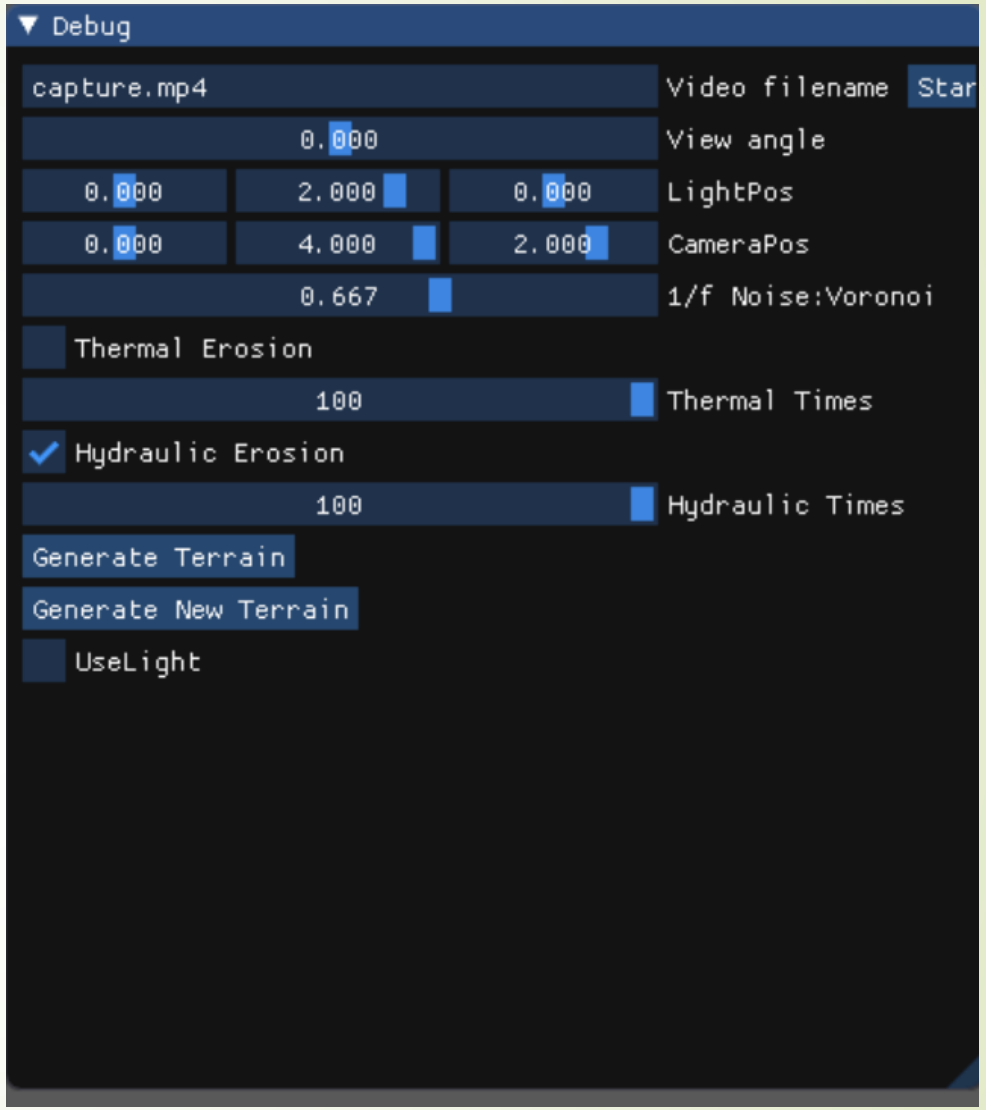
- Hydraulic erosion simulates changes to the terrain caused by flowing water dissolving material, transporting it and depositing it elsewhere. This is kind of similar to the previous erosion, but it need a few more steps to compute water and material distribution.
- I'm still working on it. I'm a bit confused that for me hydraulic erosion just simply smoothed the terrain. But I didn't find anything wrong with my code. I'll try to improve this in next check point.





More Controls

- I add some new UI to gain more controls while generating terrain.



Future Works

- Finish Hydraulic Erosion.
- Make some optimization to the algorithms to get higher speed or better results. Now the computation is quite time-consuming.