

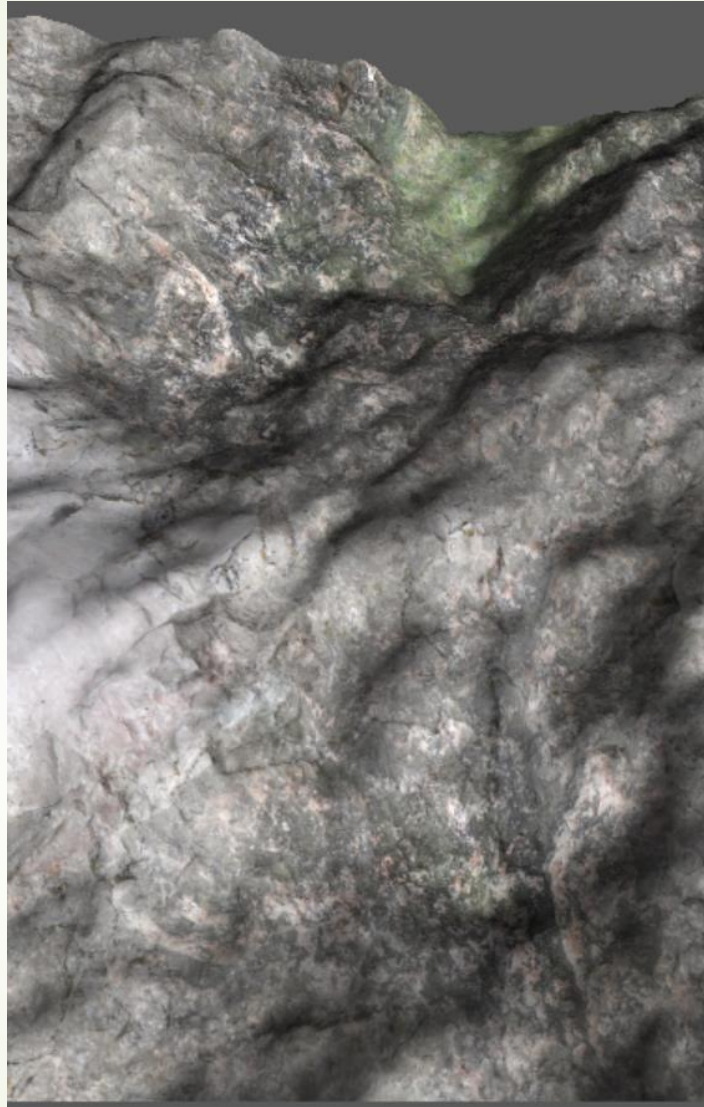


# Realtime Procedural Terrain Generation

Harry Pan

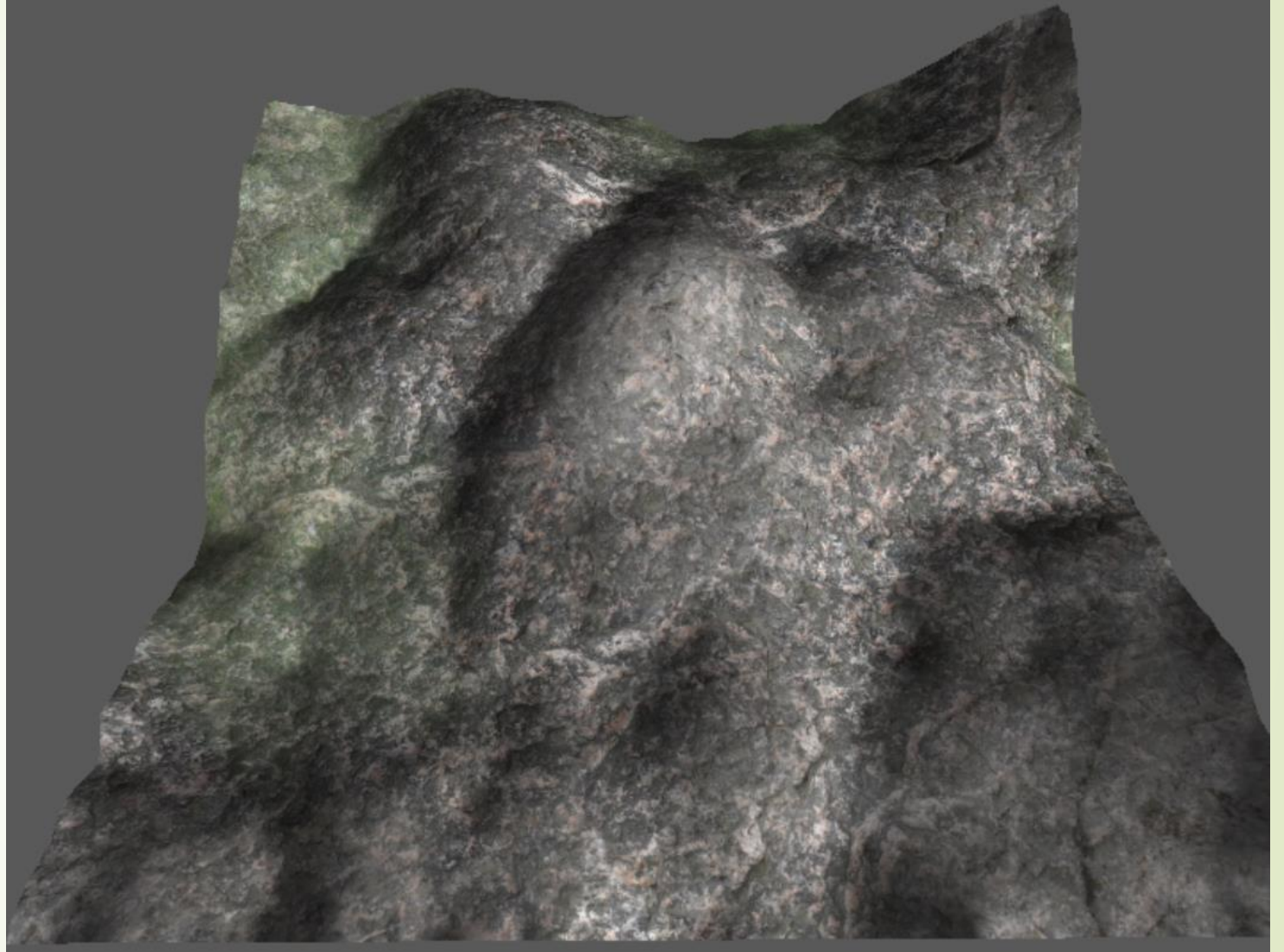
# Hydraulic Erosion

- Hydraulic Erosion has 4 steps:
  - Water appearance(rain)
  - Material dissolving
  - Water(with material) transportation
  - Water evaporation and material deposition
- Images show the result after 100 iterations of Hydraulic Erosion.



# More Textures

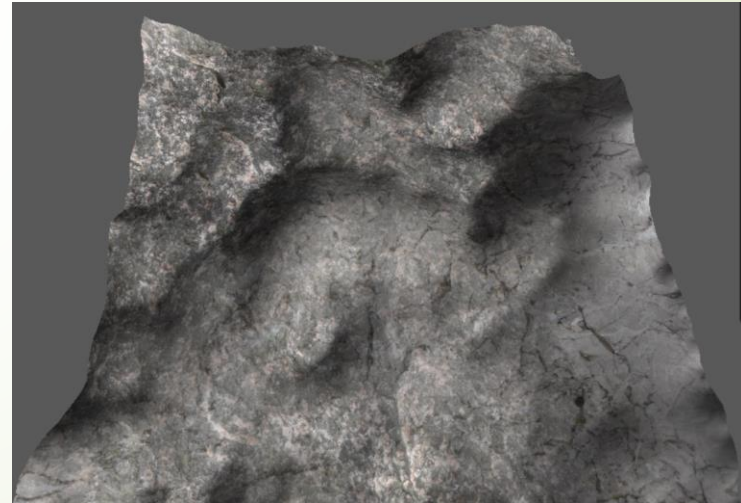
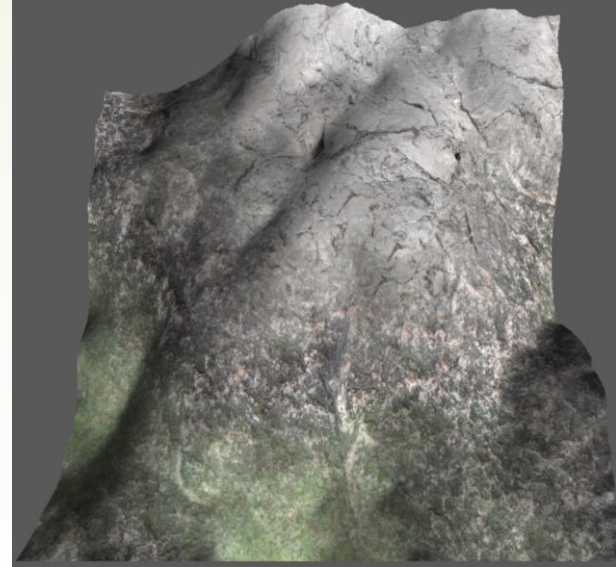
- Now I have multiple textures blending by the height to make it look smoother.
- I also improved some light effect to make it more realistic.





# Other Optimization

- Add some improvements for performance, such as applying the results of erosion immediately to height map to avoid some weird deep holes in Thermal Erosion, we can also use 4 neighbors instead of 8 neighbors to reduce computation time.
- Now you can run two different erosions repeatedly for no matter what times you want.



# Reference

- Olsen, Jacob. "Realtime procedural terrain generation." (2004): 31.
- Beneš, Bedřich, and Rafael Forsbach. "Visual simulation of hydraulic erosion." (2002).