

Fundamentals of Computer Graphics and Image Processing

Computer Graphics - Exercise #05

Technical English

Exercise #05

Words ending with “x”

In plural form, words may end variously:

complex^x => complex^{es}

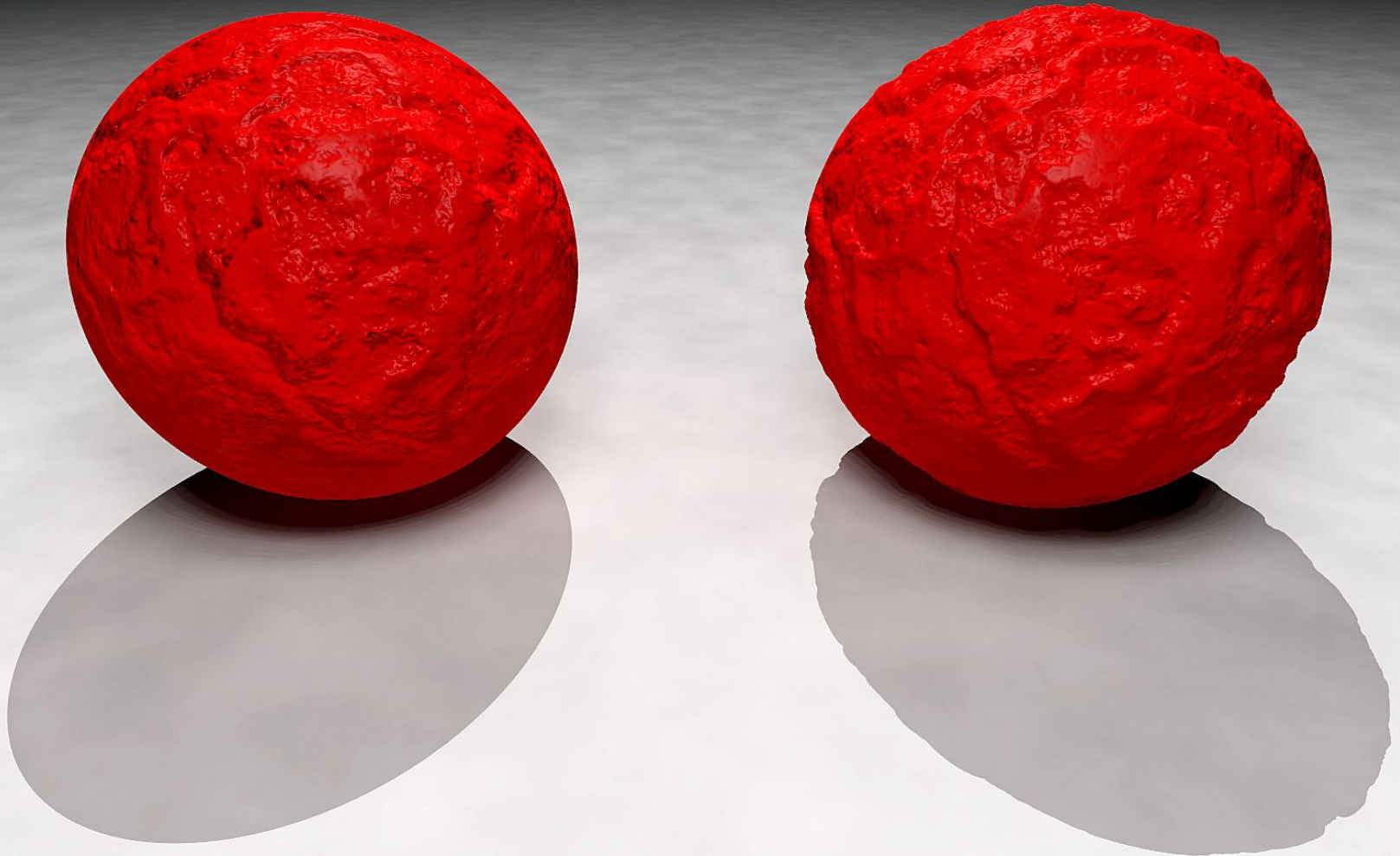
vortex => vortices

vertex => vertices

index => indices

matrix => matrices

Which sphere has more detailed geometry?

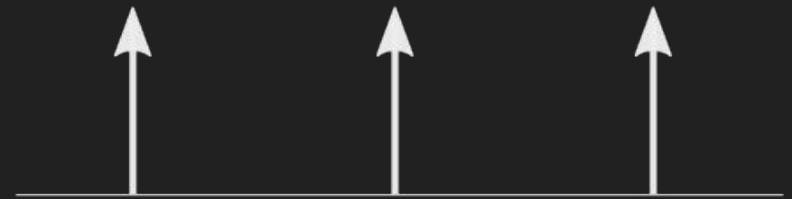


Bump/Normal Mapping

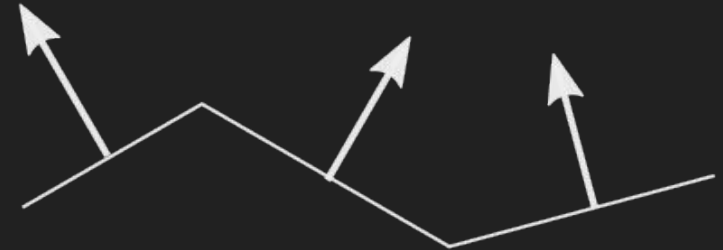
A trick used for enhancing mesh visuals after rendering.

Instead of having many vertices and faces, mesh details are stored in special texture map.

Rendered mesh looks more detailed than it is in reality.



Base surface



Detailed surface

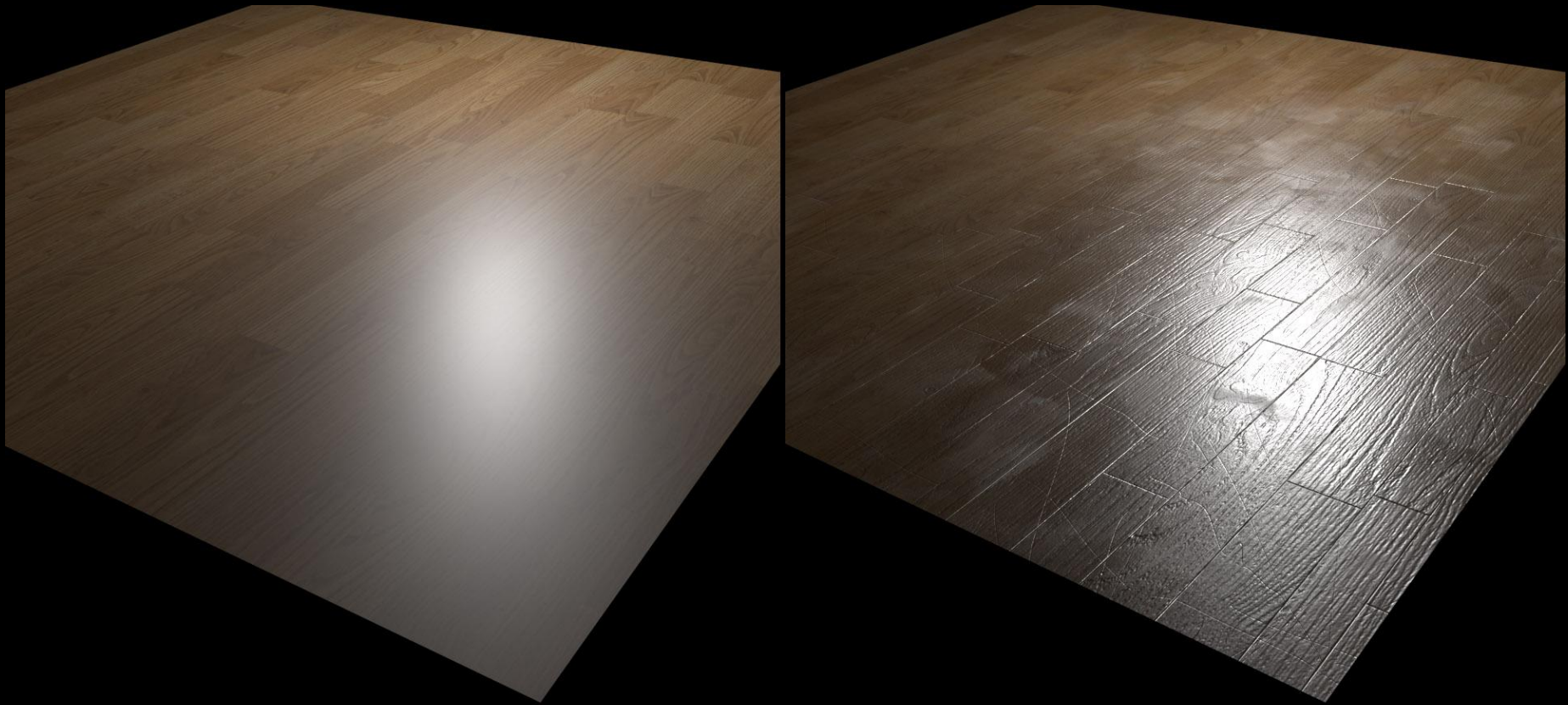


Bump-mapped surface

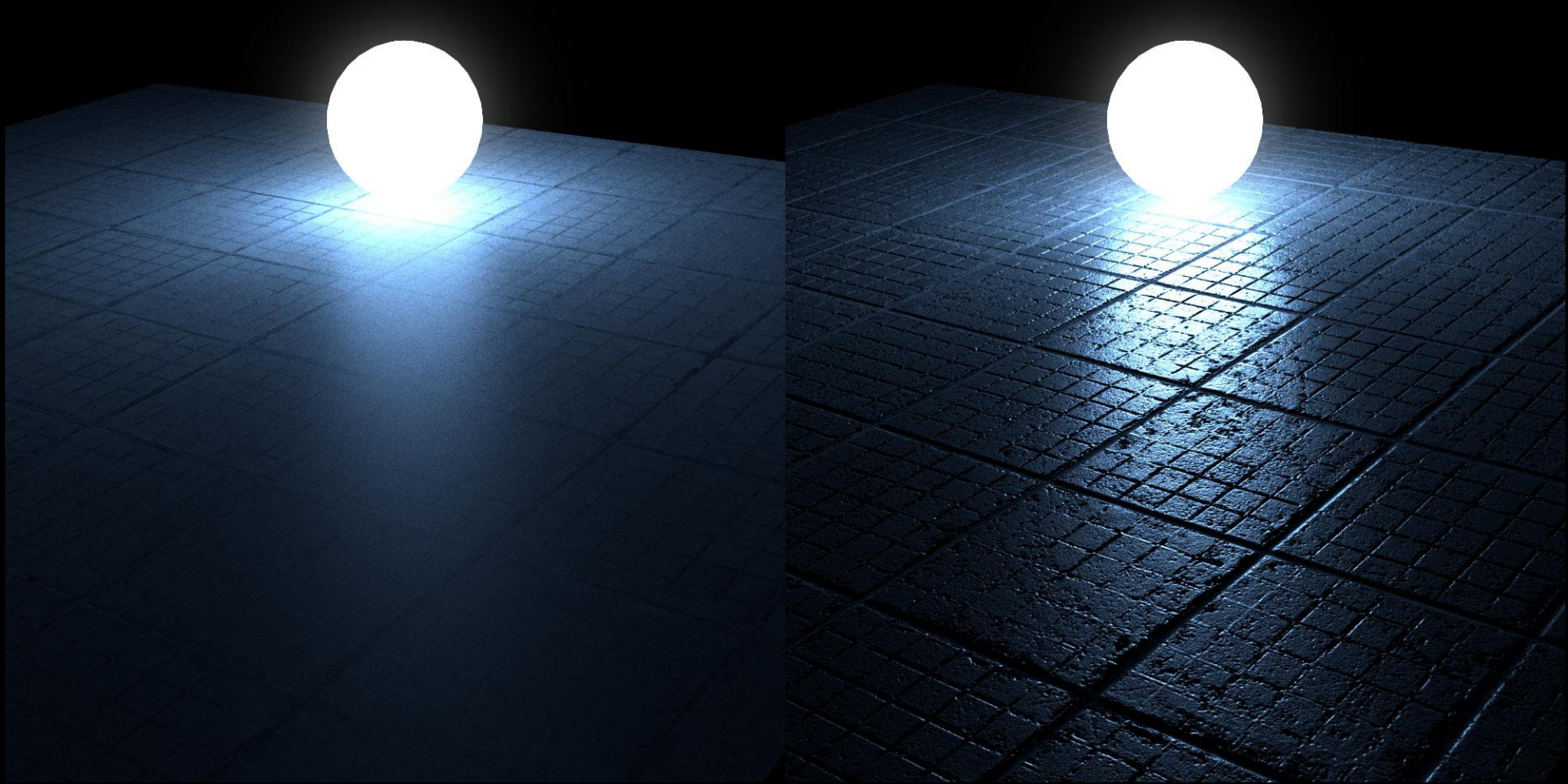
Bump map vs. Normal map



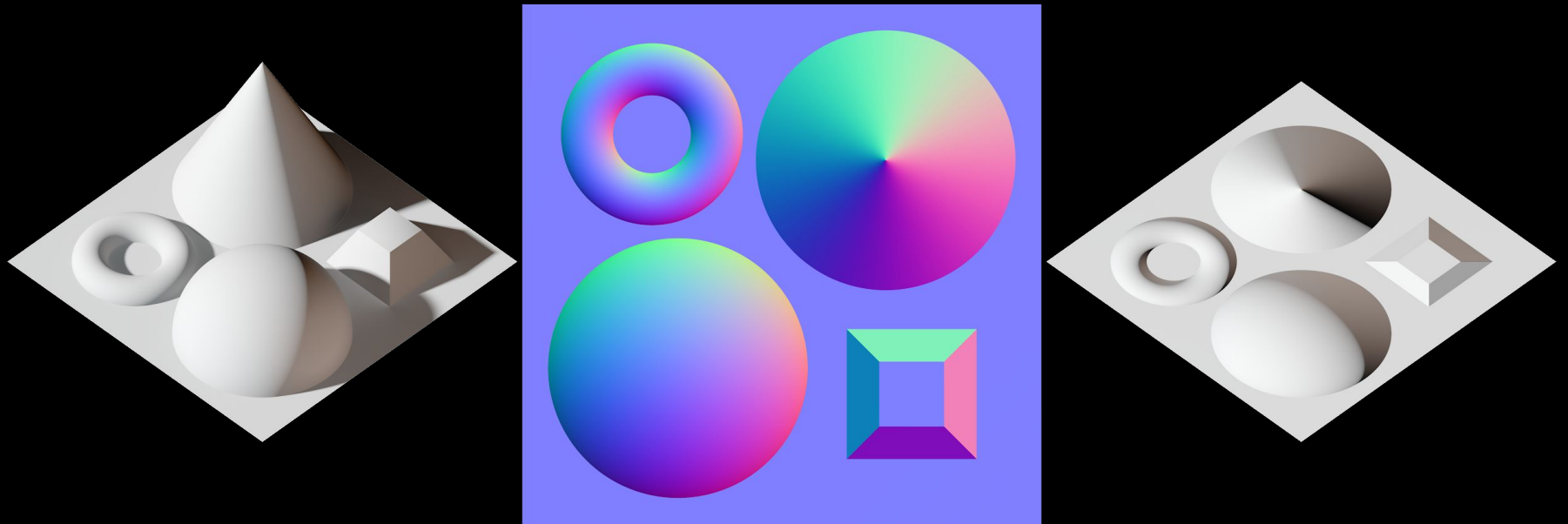
Normal mapping is sufficient in some cases...



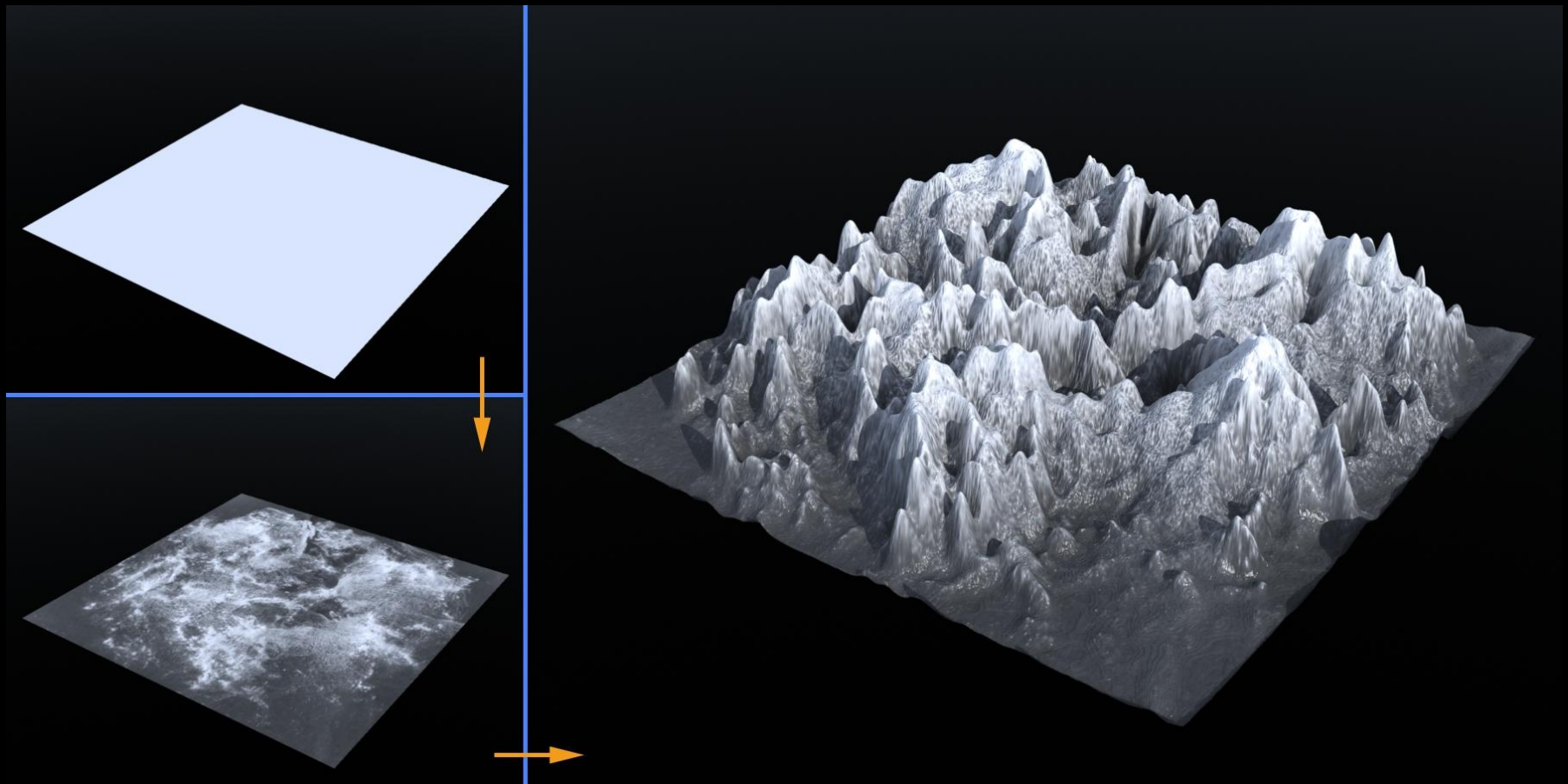
Normal mapping is sufficient in some cases...



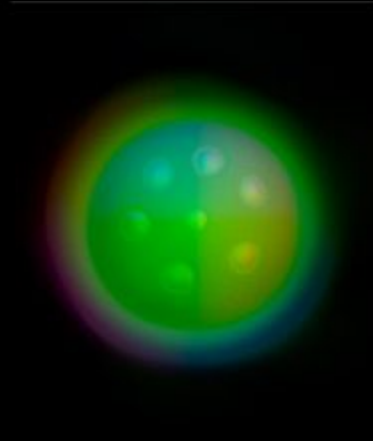
but not all the time.



Displacements will do the job



Displacements can do even more



Bump, Normal or Displacement Map?



Graphics Studies

Adrian Courrèges

- GTA V
- DOOM
- Metal Gear Solid V
- Deus Ex HR



Animation Showcase

[2D rig animation](#)

[3D rig animation](#), [face](#)

[Motion capture](#)

[Physical simulation](#)

Labs Evaluation

Emergency contact (practical questions):

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- A single project split into several stages:

Stage	Description	Evaluation	Deadline
Stage #1	Obj. file loading	3 points	17.10.2021
Stage #2	Transformations	10 points	25.10.2021
Stage #3	Shading and Lighting	7 points	7.11.2021

