

Bump Maps

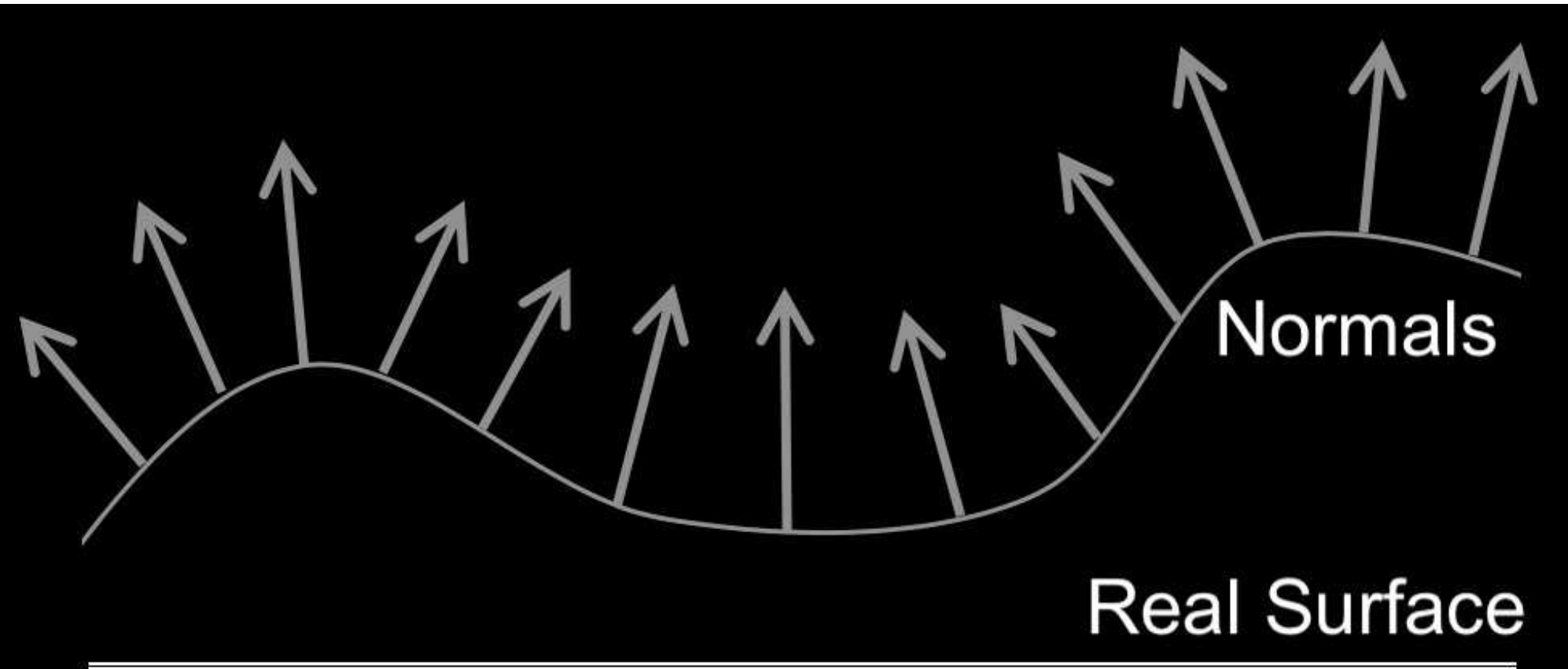
Determining closest intersections is costly
Especially with complex models (many triangles)

But what if we were able to cheat a bit ?

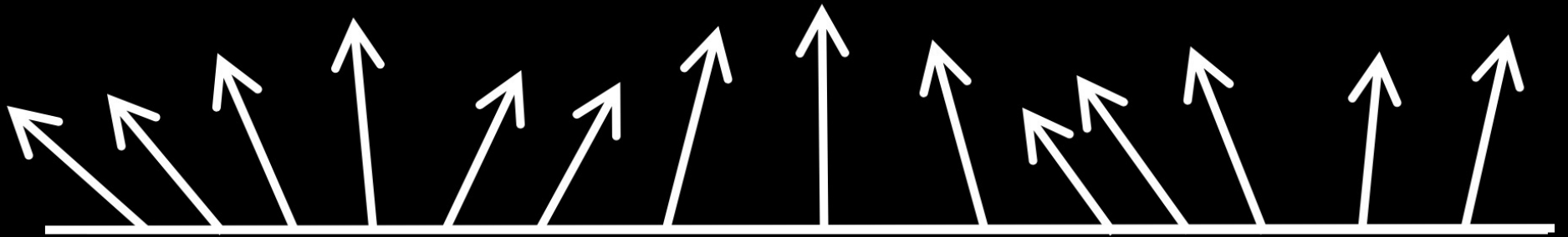
Fake complex geometry with just "light & shadows"
Without adding any additional primitives !

Rather than just a single normal for a surface
What if we had a whole bunch of them ?

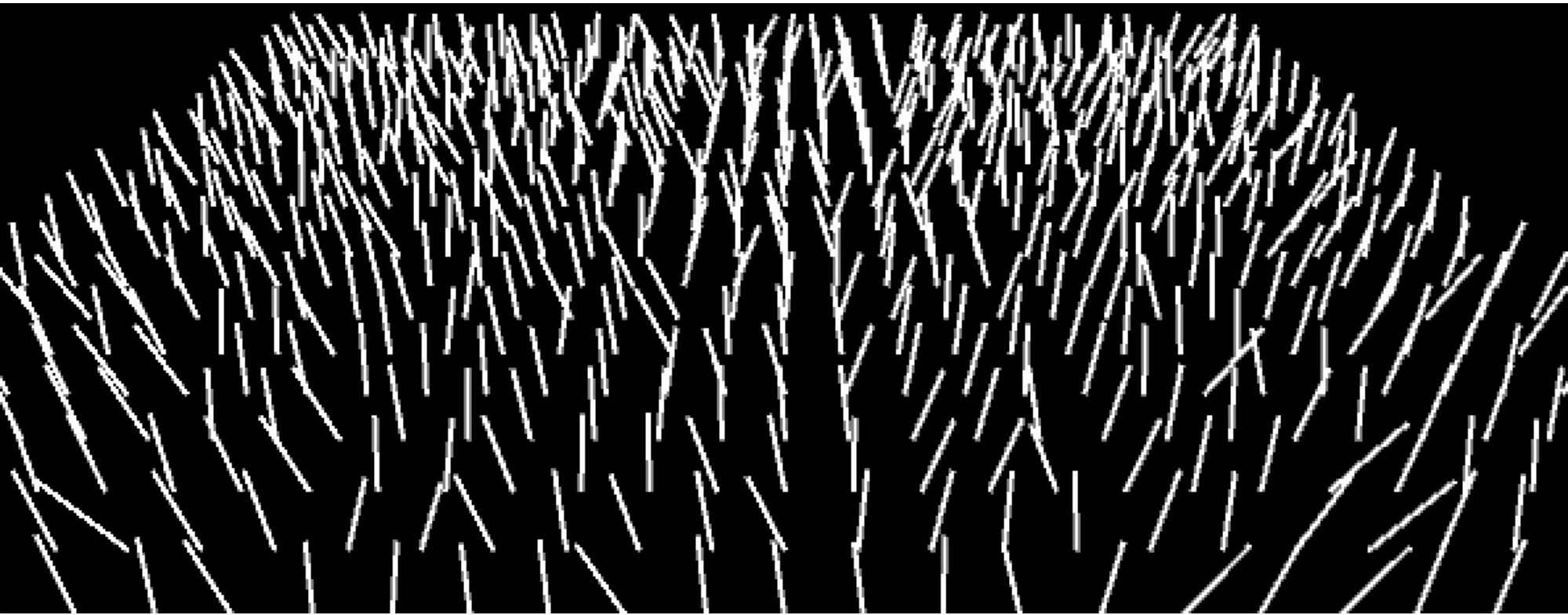
"Fake" Geometry



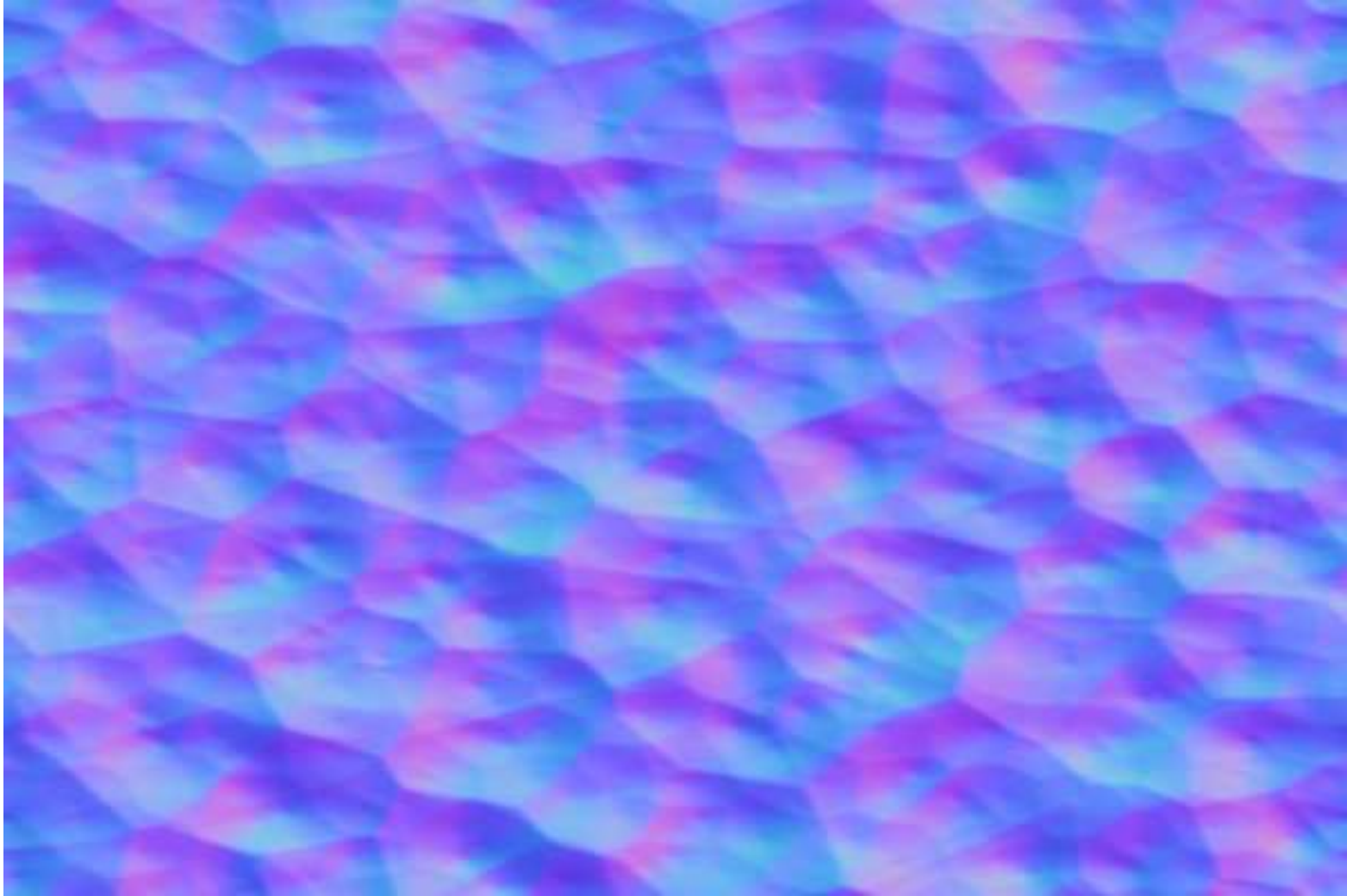
Single Surface, Many Normals



2D Normal Field



How are these normals stored ?



Bump Map

Very much like a texture map image file

But contains XYZ normals, rather than RGB colours

Each model vertex is tied to a point in the bump map

We can interpolate a normal for each triangle pixel
(Just as we do with texture maps)

Again, we need to think about perspective correction

What does it look like when we apply a bump map ?

ProximityAndIncidence