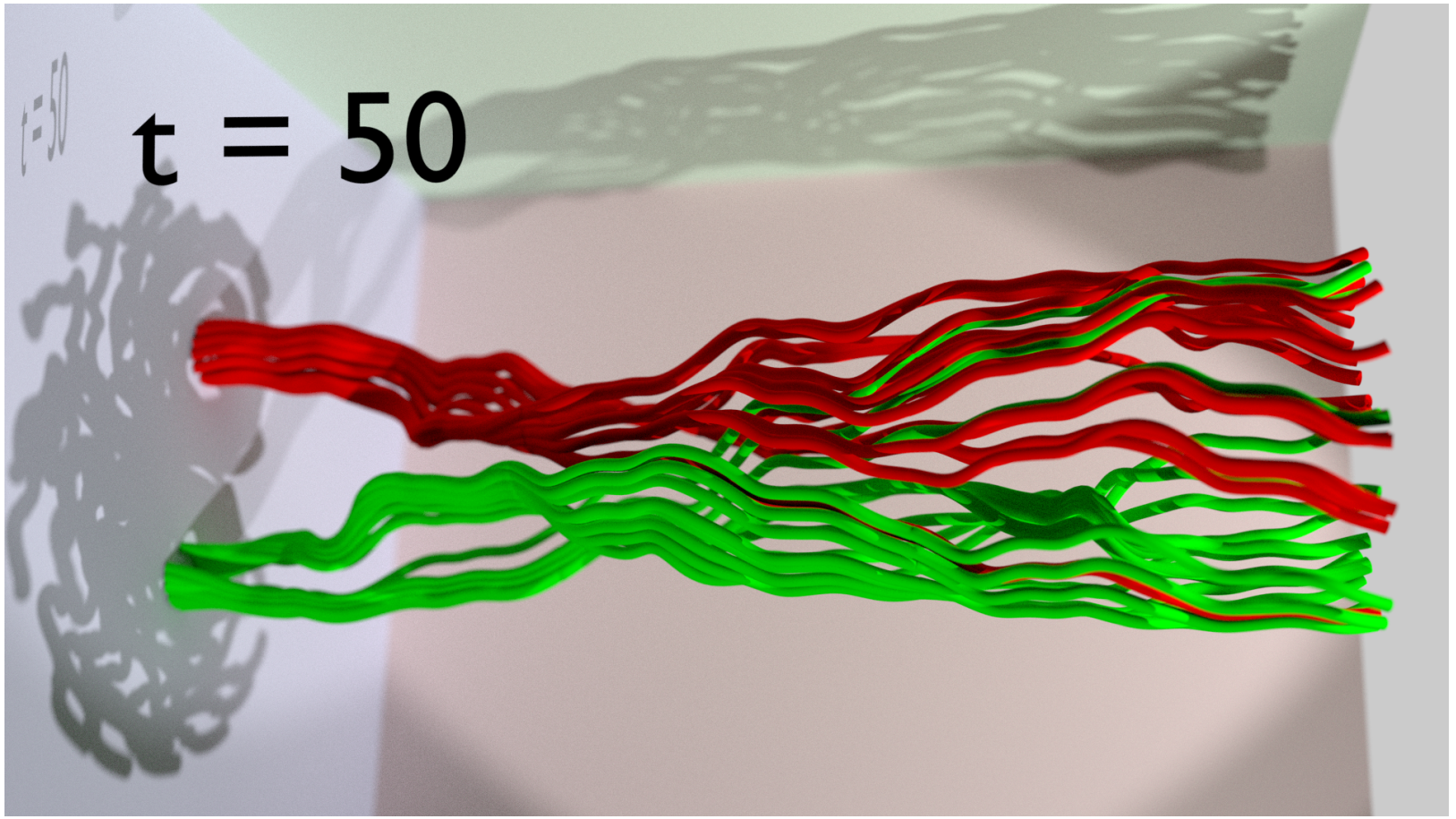
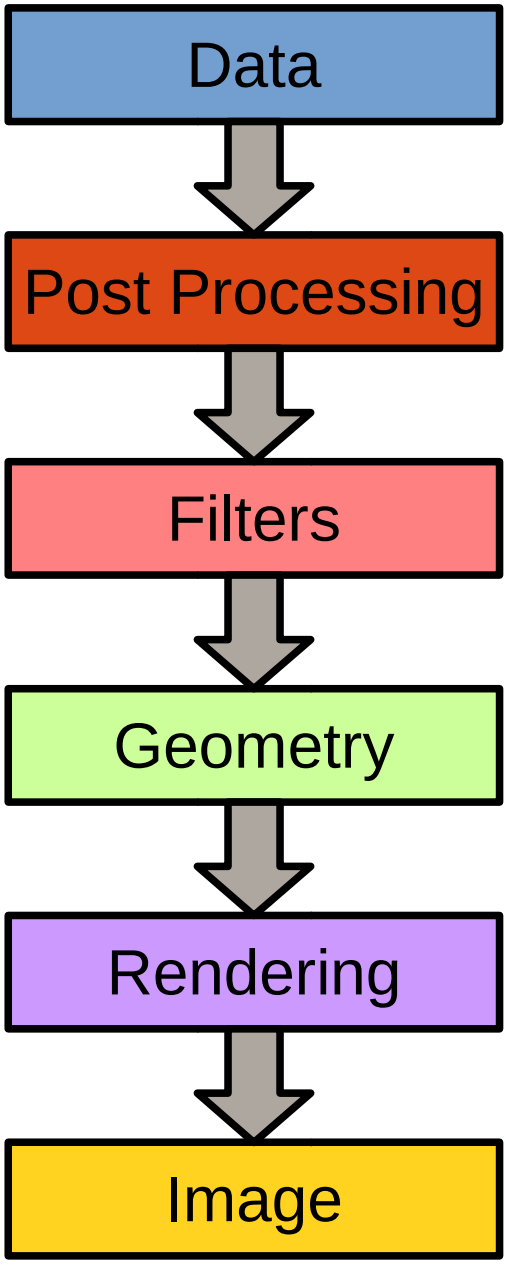
BlenDaViz

Simon Candelaresi

UNIVERSITY OF DUNDEE



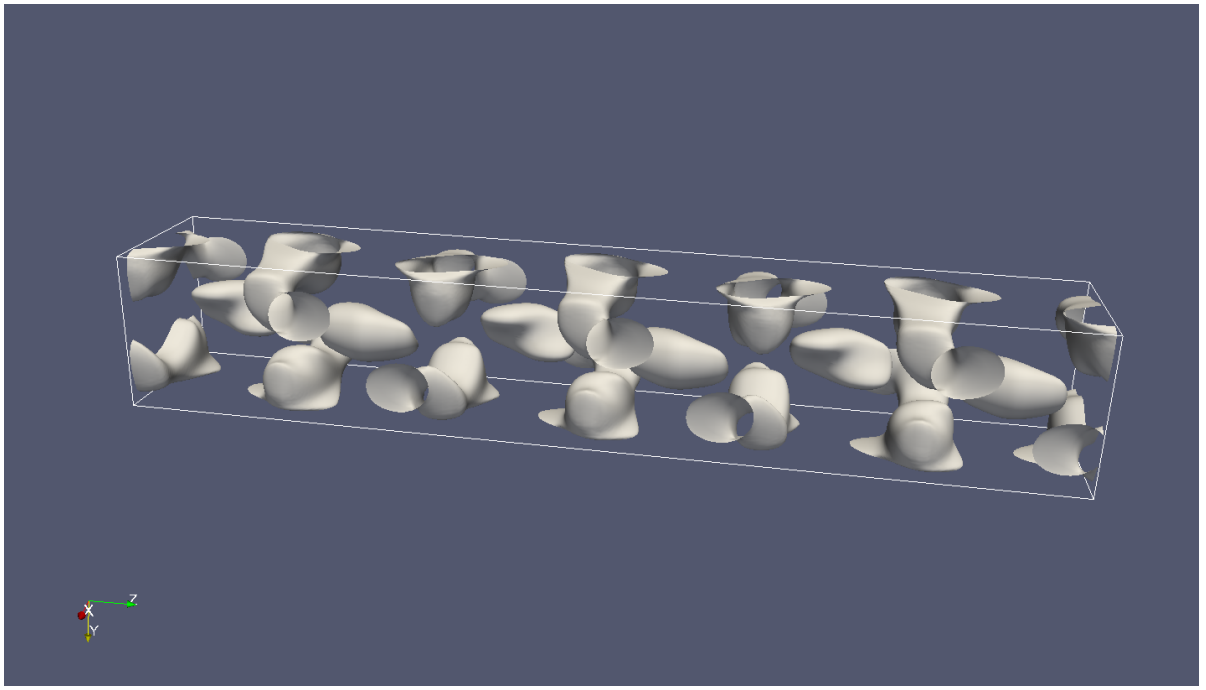
Data to Image



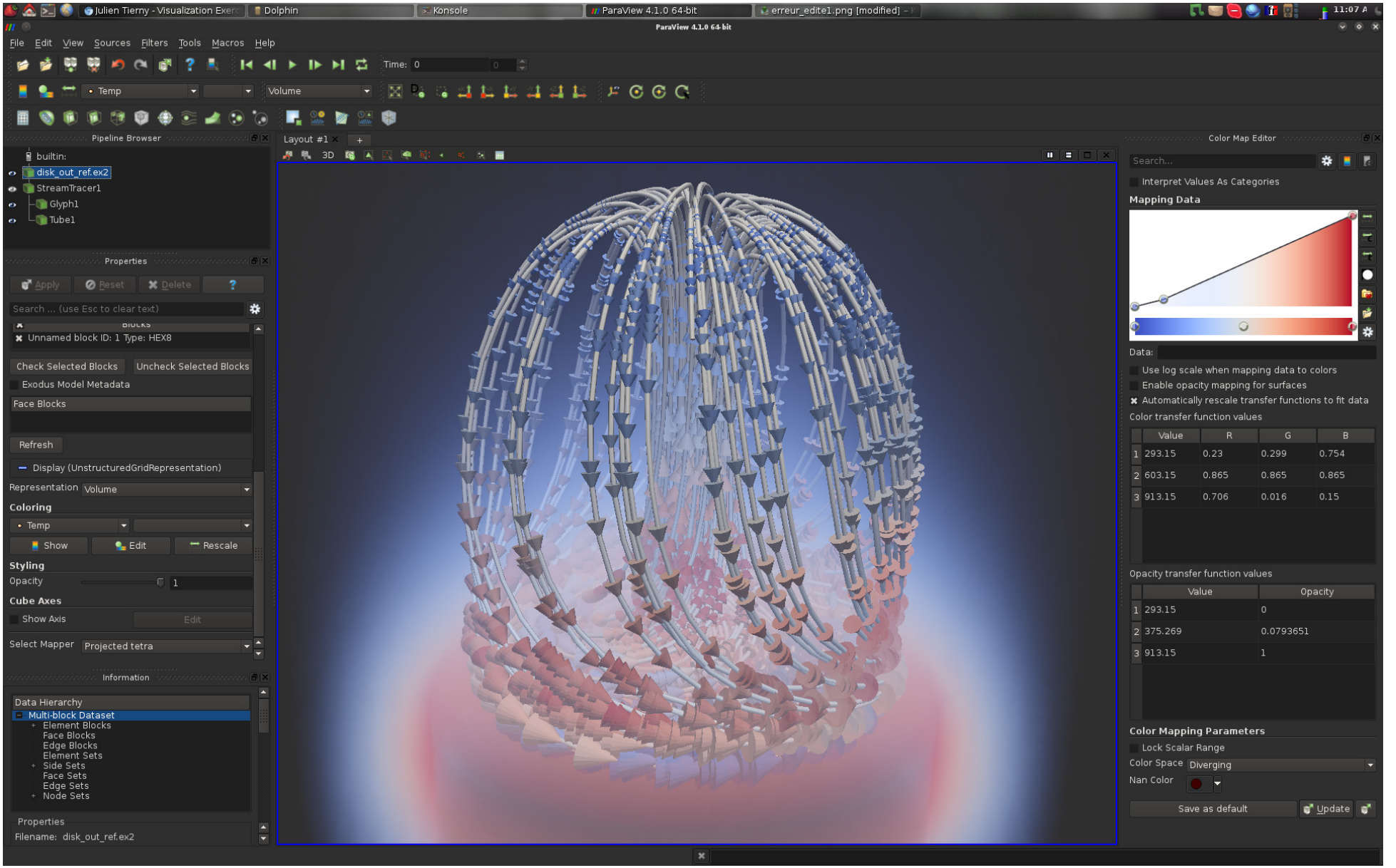
`01110001110101001101` (bfield.vtk)

$$B^2 = \vec{B} \cdot \vec{B}$$

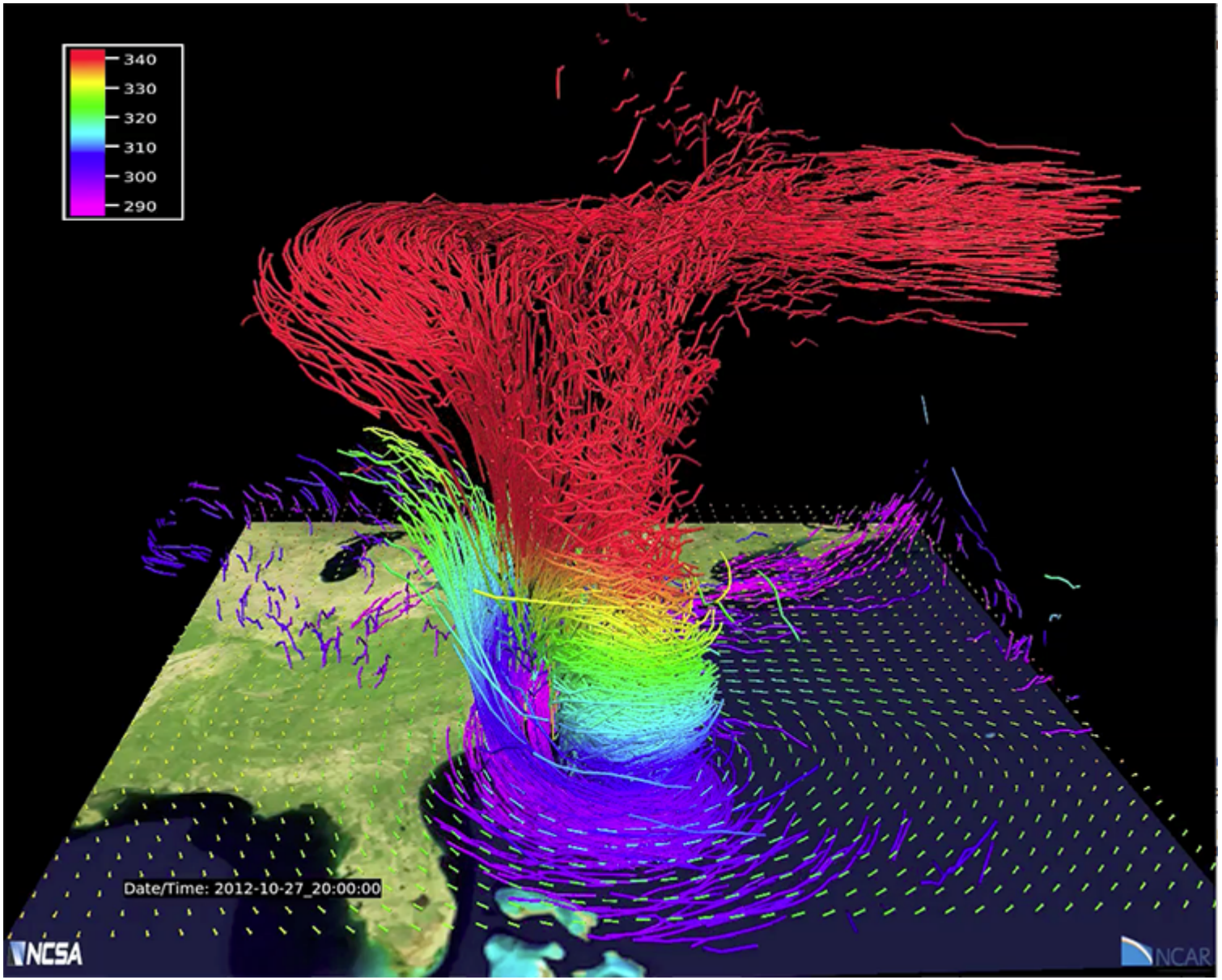
$$B^2 = [0.1, 0.2, 0.3]$$



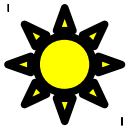
Paraview

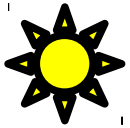

Julien Tierny - Visualization Exer
Dolphin
Konsole
ParaView 4.1.0 64-bit
erreur_edite1.png [modified]
ParaView 4.1.0 64-bit
File Edit View Sources Filters Tools Macros Help
Time: 0
Temp
Volume
Pipeline Browser
builtin:
disk_out_ref.ex2
StreamTracer1
Glyph1
Tube1
Properties
Apply Reset Delete
Search ... (use Esc to clear text)
Unnamed block ID: 1 Type: HEX8
Check Selected Blocks
Uncheck Selected Blocks
Exodus Model Metadata
Face Blocks
Refresh
Display (UnstructuredGridRepresentation)
Representation Volume
Coloring
Temp
Show Edit Rescale
Styling
Opacity 1
Cube Axes
Show Axis Edit
Select Mapper Projected tetra
Information
Data Hierarchy
Multi-block Dataset
Element Blocks
Face Blocks
Edge Blocks
Element Sets
Side Sets
Face Sets
Edge Sets
Node Sets
Properties
Filename: disk_out_ref.ex2
Layout #1
3D
Color Map Editor
Search...
Interpret Values As Categories
Mapping Data
Data:
Use log scale when mapping data to colors
Enable opacity mapping for surfaces
Automatically rescale transfer functions to fit data
Color transfer function values
Value R G B
1 293.15 0.23 0.299 0.754
2 603.15 0.865 0.865 0.865
3 913.15 0.706 0.016 0.15
Opacity transfer function values
Value Opacity
1 293.15 0
2 375.269 0.0793651
3 913.15 1
Color Mapping Parameters
Lock Scalar Range
Color Space Diverging
Nan Color
Save as default
Update

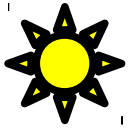
Vapor



Pros and Cons


Read many data formats.


Read geometry data.


Most common filters.


Limited and slow post-processing.


Poor animation options.

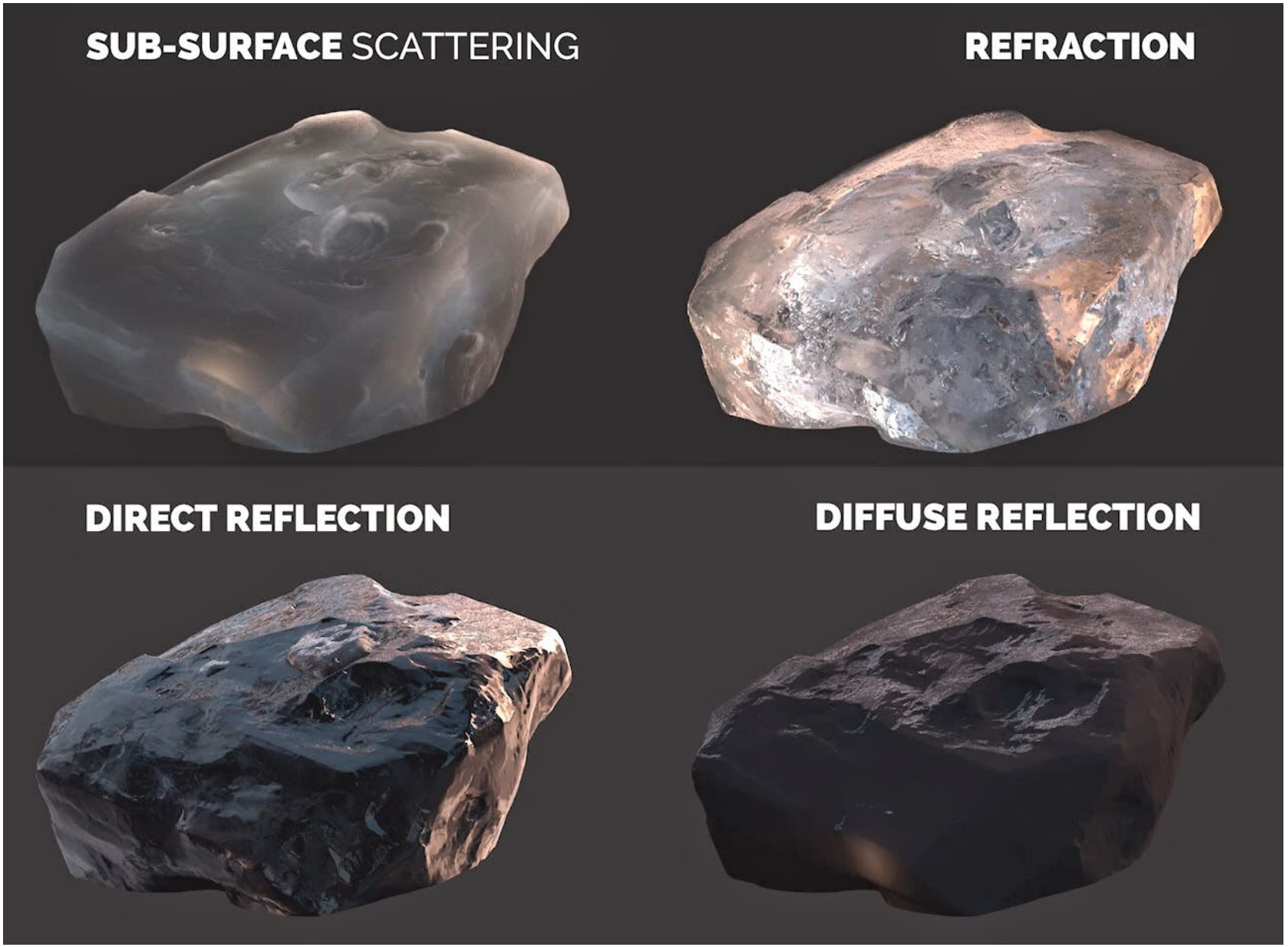

Unrealistic look.


Very limited light/shading options.

What Makes a Realistic Look?

Blender

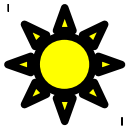
Blender

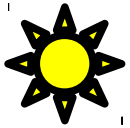

SUB-SURFACE SCATTERING
REFRACTION
DIRECT REFLECTION
DIFFUSE REFLECTION

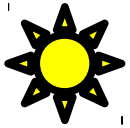
Blender


DIFFUSE
GLOSSY
GLASS
VELVET
GraphicsLearning.com
Rendered using
Blender 2.68 Cycles

Pros and Cons


Great and realistic graphics.


Realistic shaders, materials and lighting.

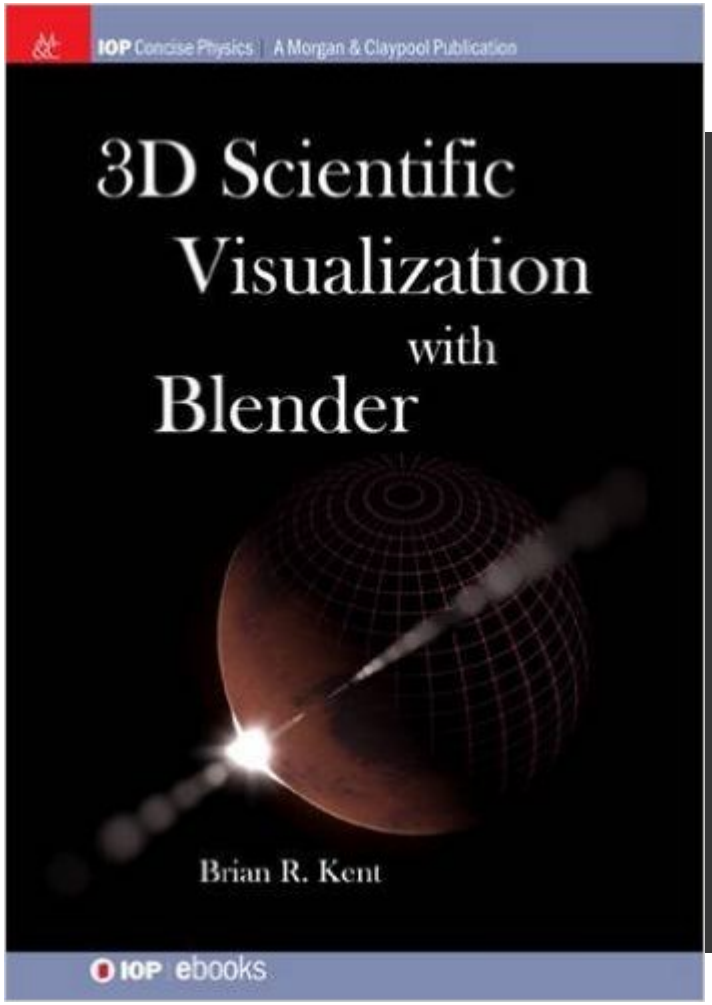

Easy and powerful animations.

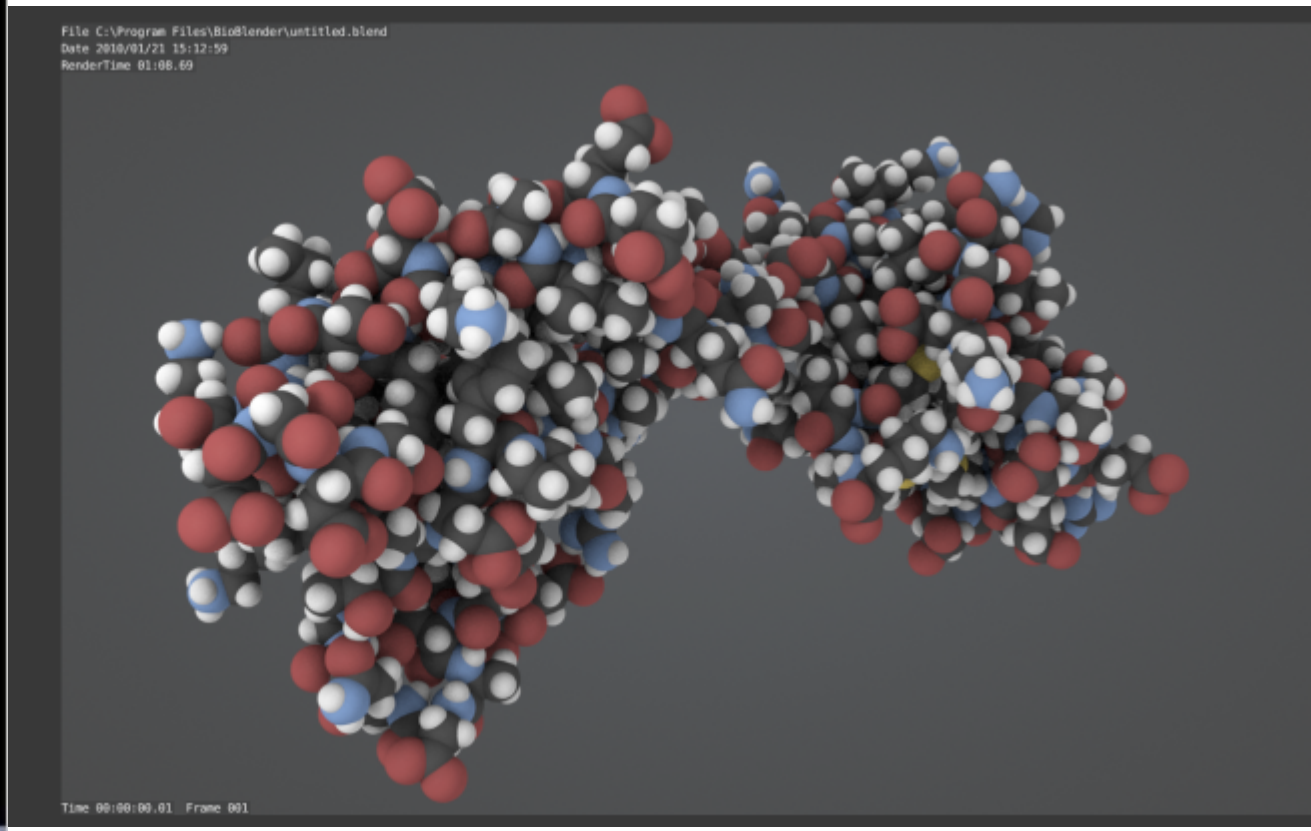

No data import (except geometry and lights and materials).


No filters.

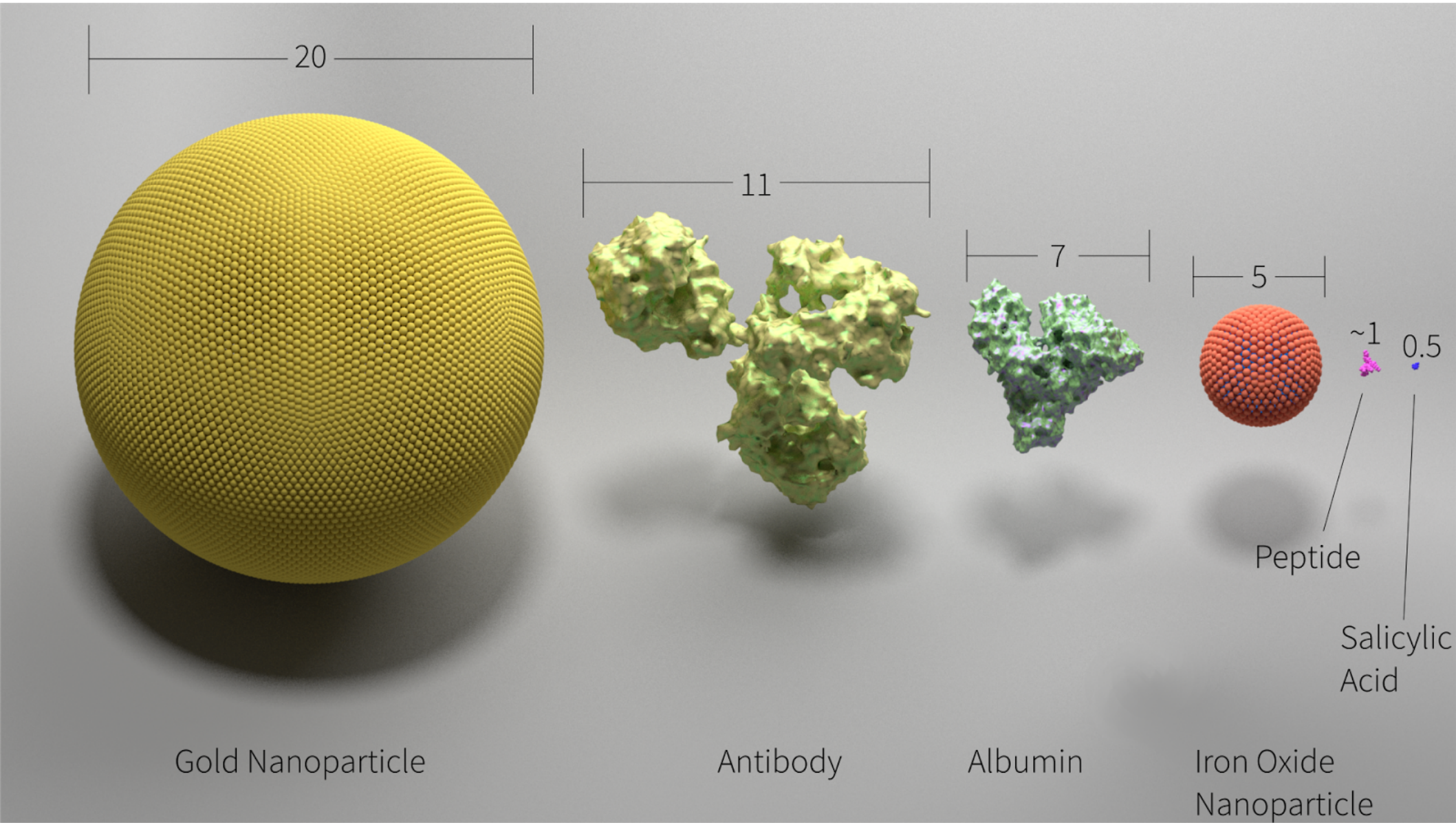

No postprocessing.

Blender and Visualization

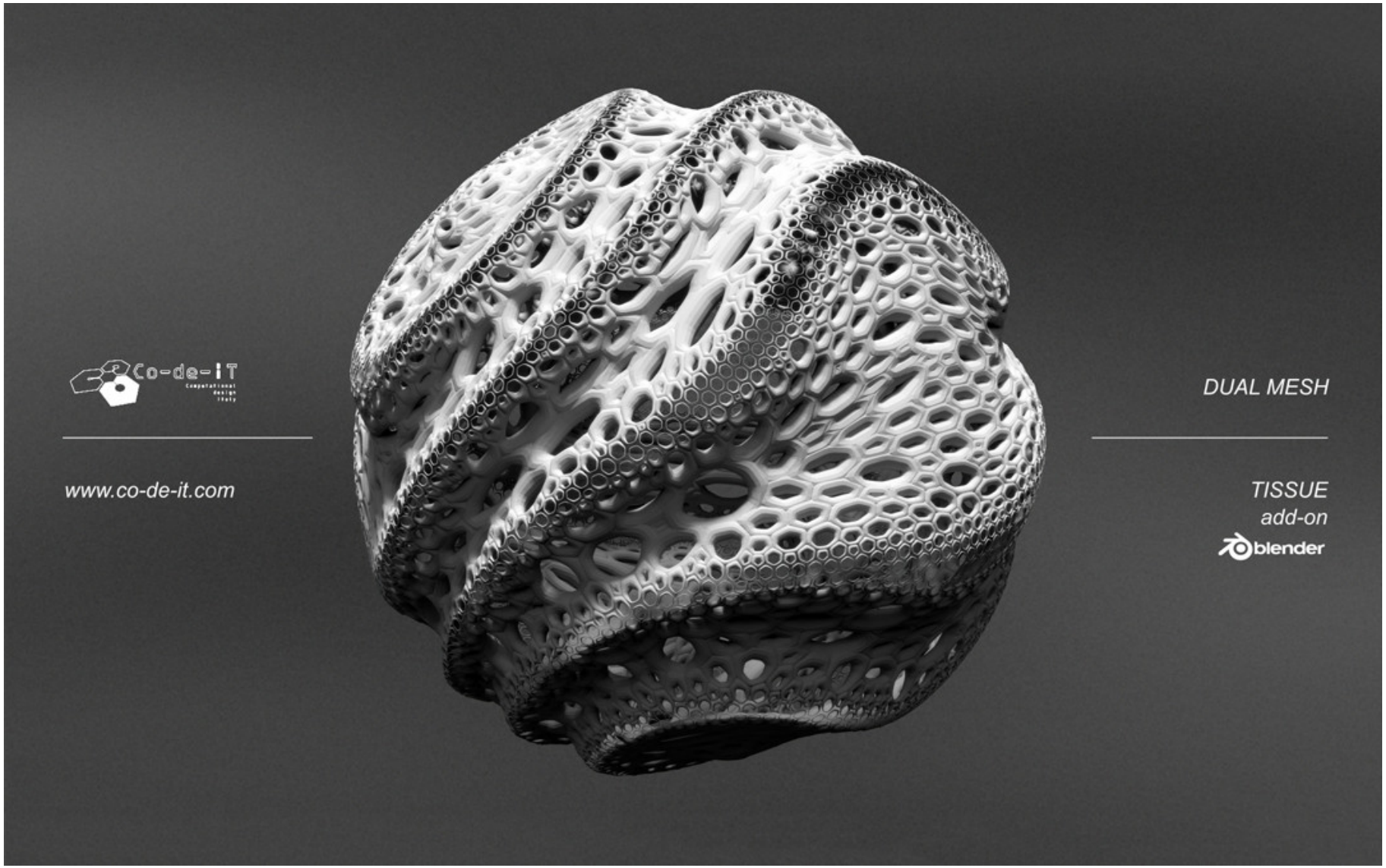




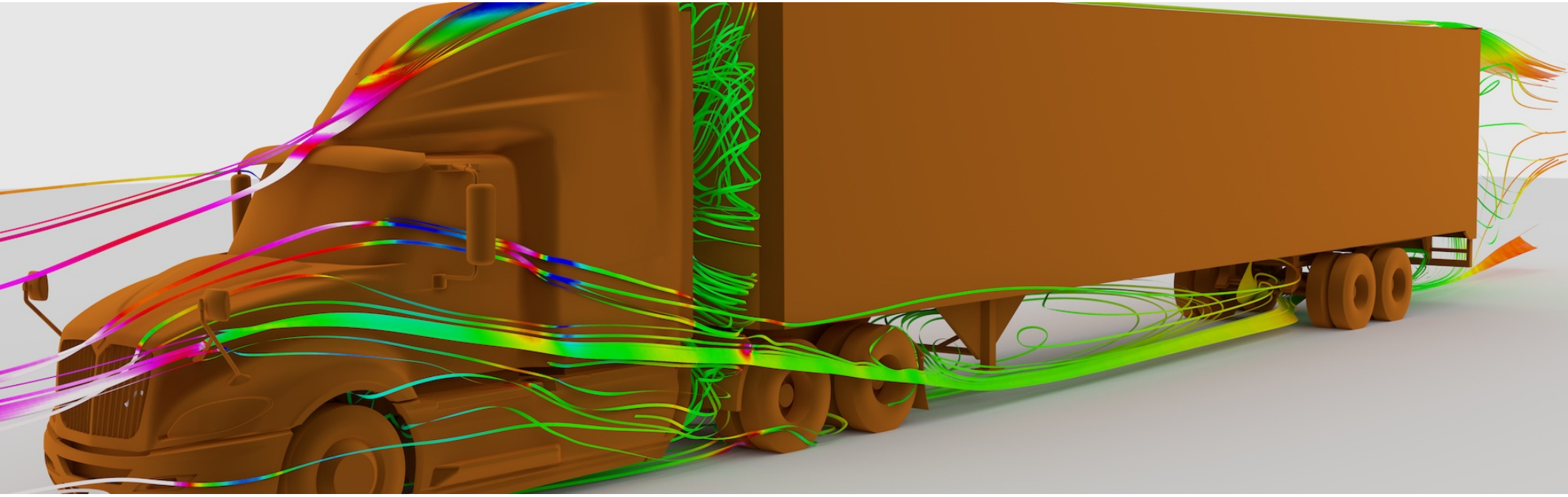
Blender and Visualization



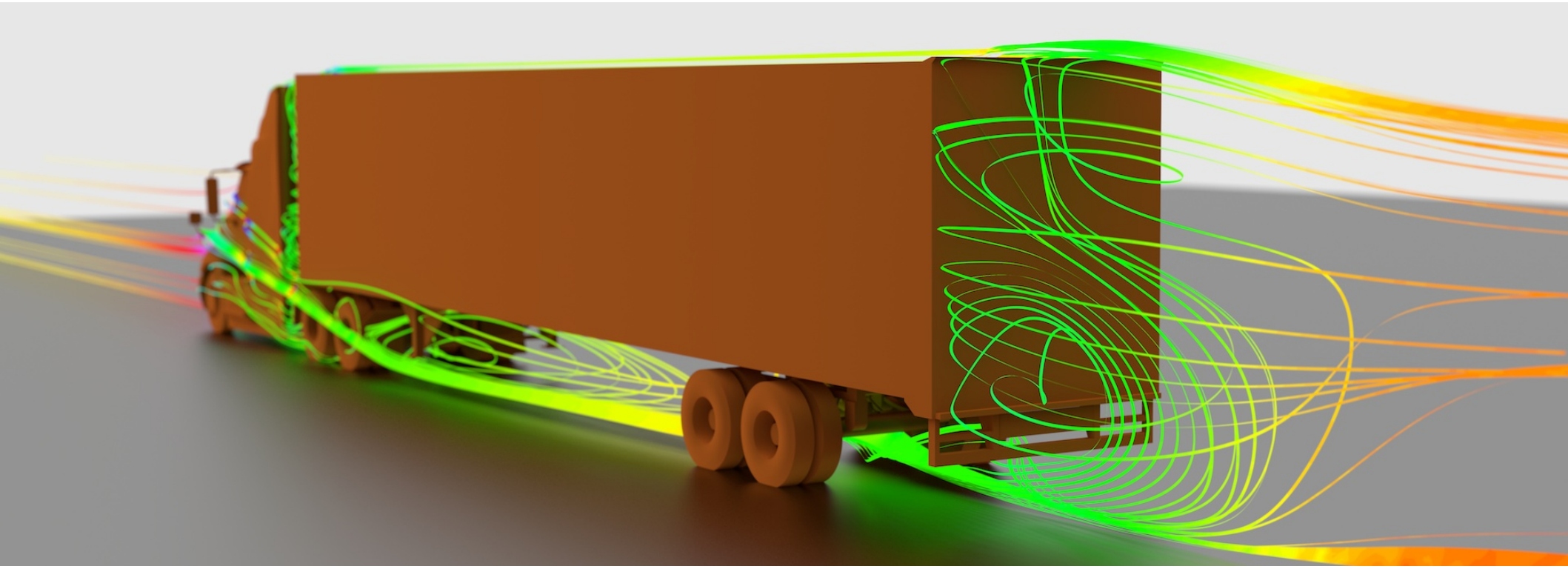
Blender and Visualization



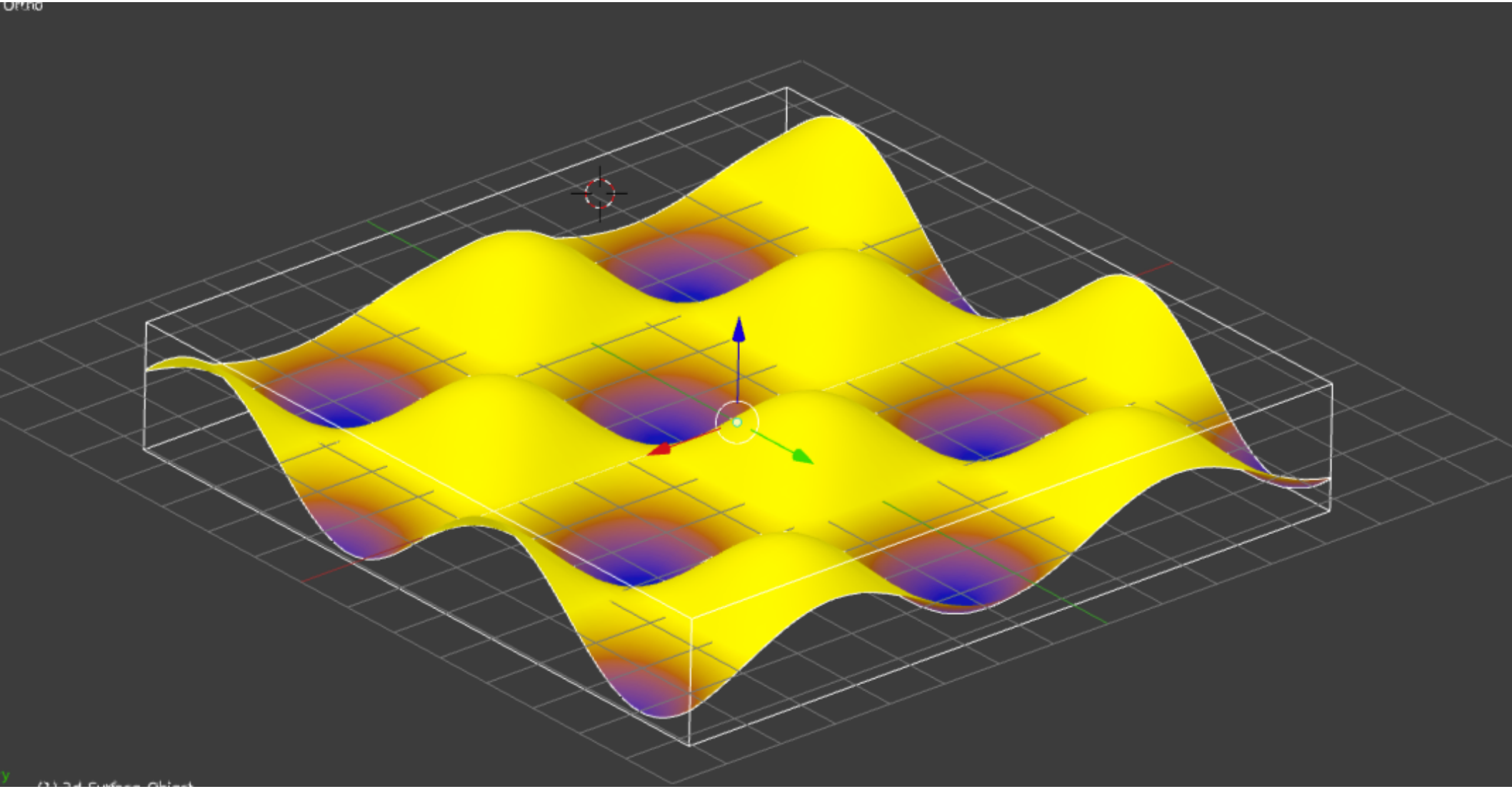
Blender and Visualization



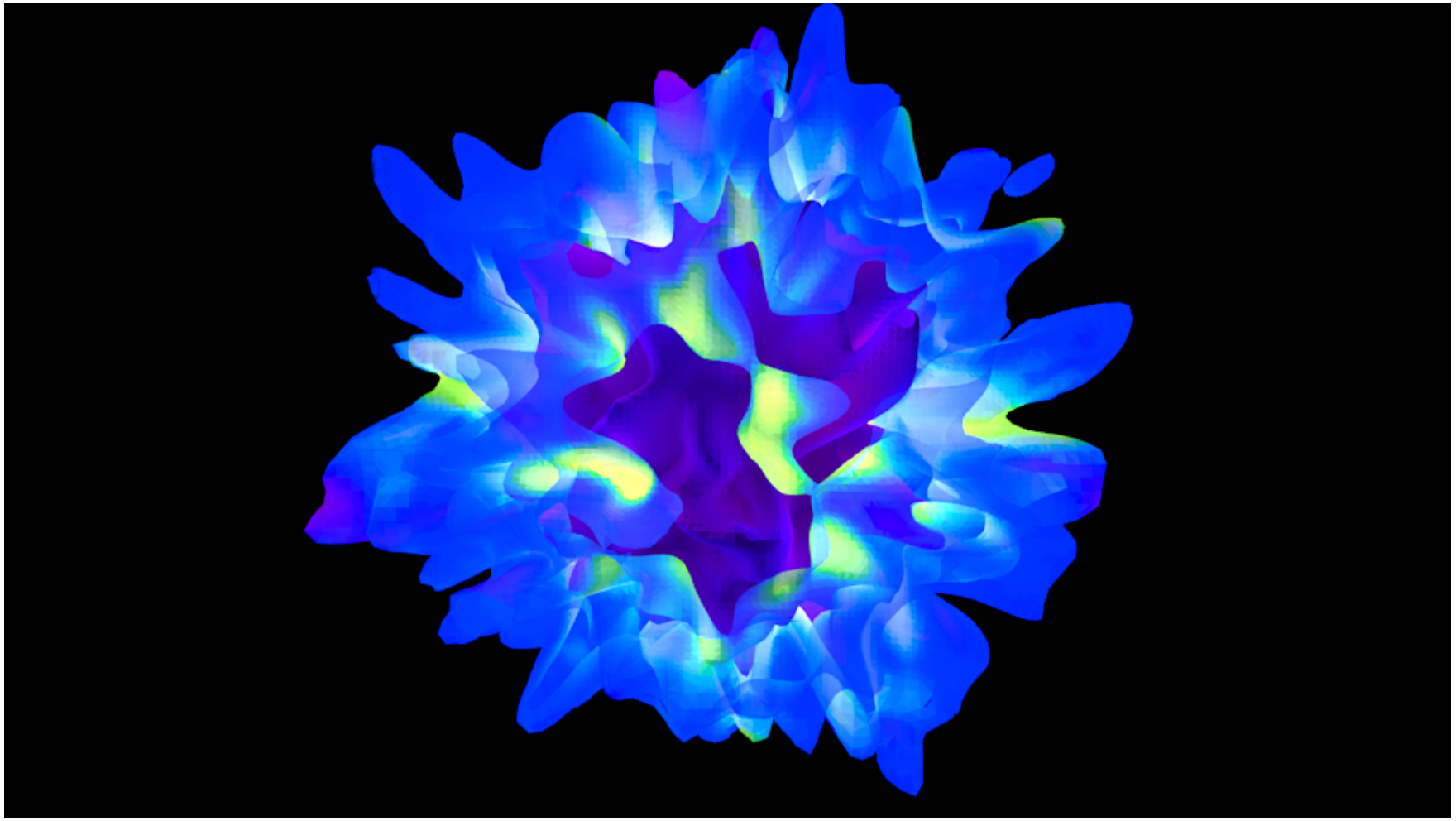
Blender and Visualization



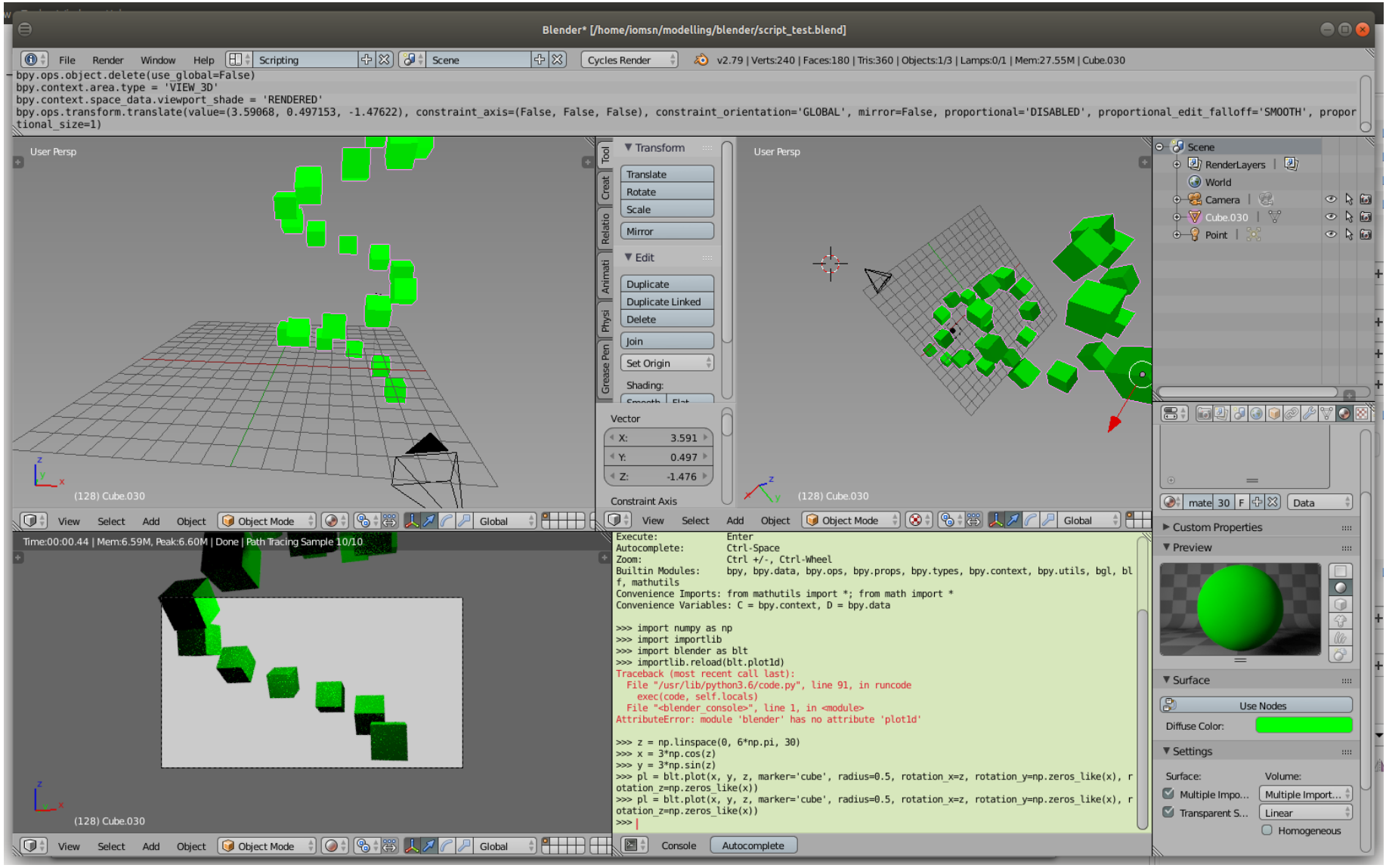
Blender and Visualization



Blender and Visualization

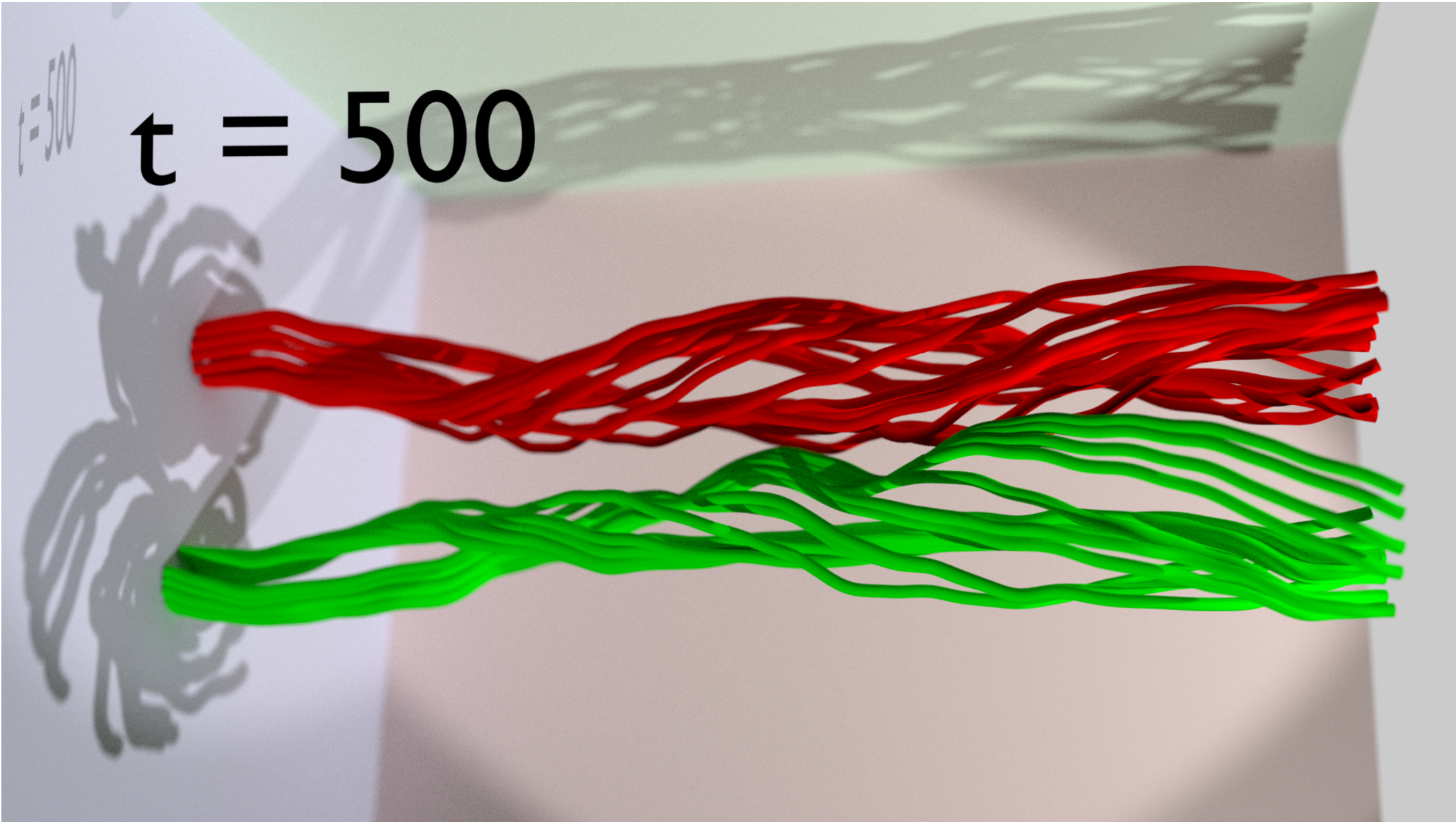


BlenDaViz



github.com/SimonCan/BlenDaViz

BlenDaViz



github.com/SimonCan/BlenDaViz

BlenDaViz

- Quick and intuitively to use.
- Everything possible through console.
- Object oriented.
- Group plot geometry into one blender object.

Outlook

- Axis and bounding boxes.
- Labels and annotations (LaTeX).
- Automatic camera and lights.
- Volume rendering.
- Iso surfaces.
- Streamlines
- Time integration.

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