Unit 2
Solid models

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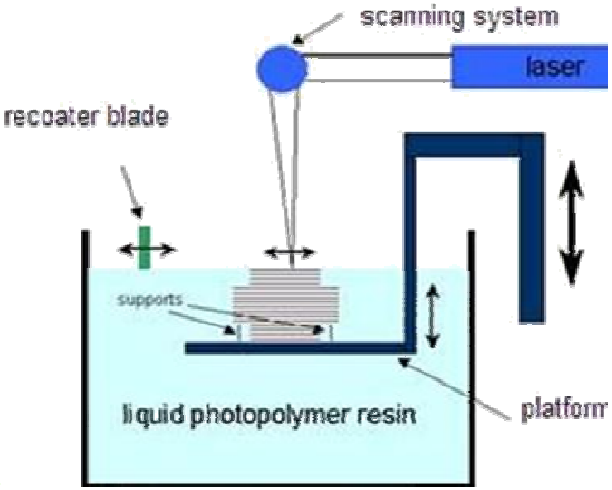
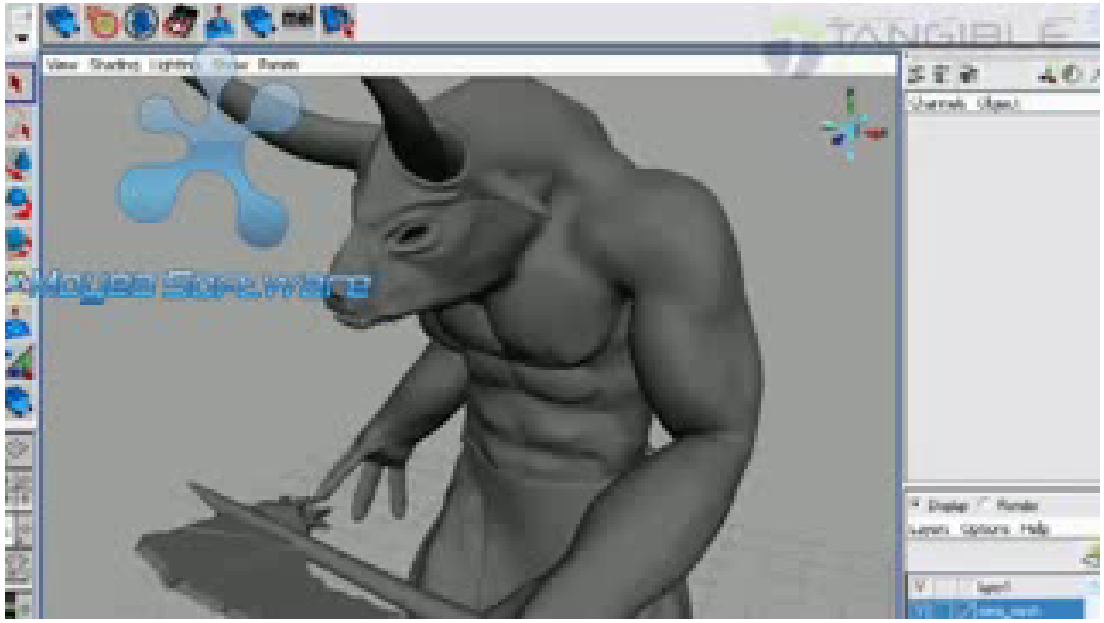
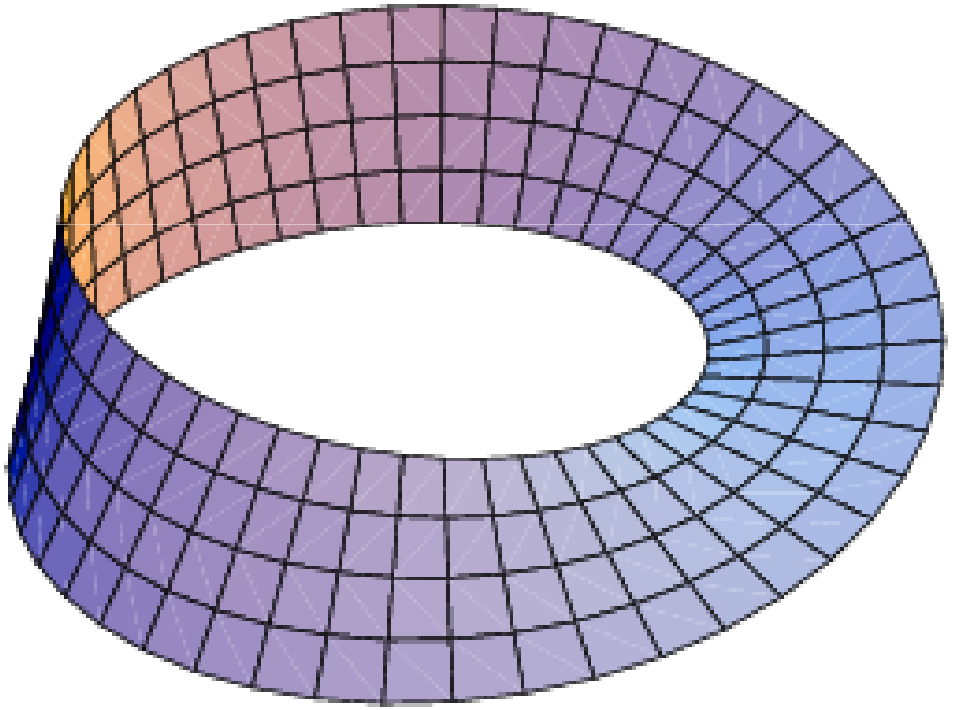
Model validity



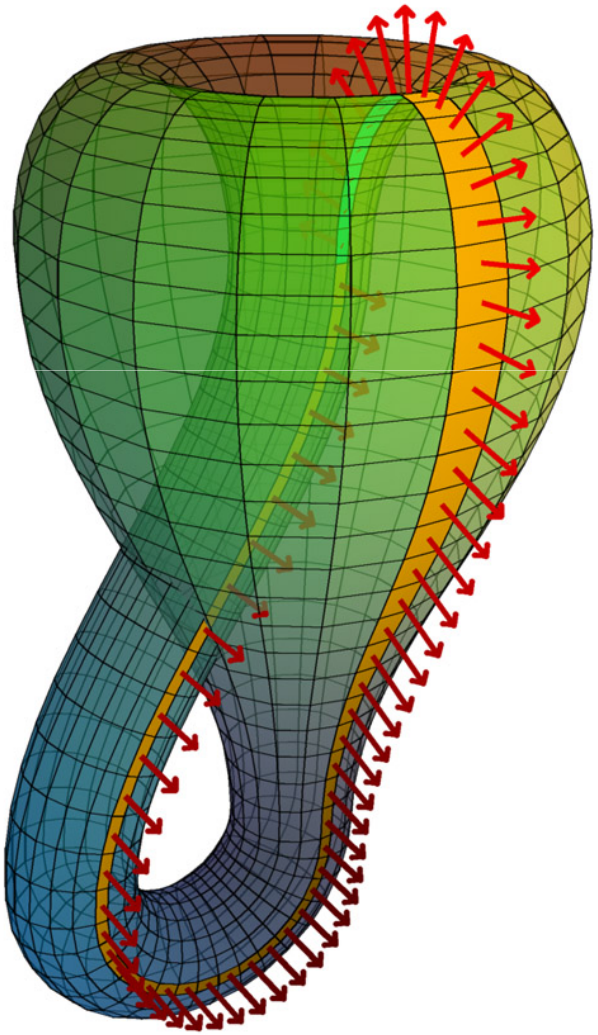


Blender [C:\Users\andujar\Desktop\mario-half.blend]
File Add Render Window Help
Default
Scene
Blender Render
v2.69 | Verts:56203 | Faces:56832 | Tris:112402 | Objects:1/3 | Lamps:0/1 | Mem:30.
Object Tools
Transform:
Translate
Rotate
Scale
Origin
Object:
Duplicate Objects
Delete
Join
Shading:
Smooth
Flat
Keyframes:
Insert
Remove
Motion Paths:
Calculate
Clear
Repeat:
Repeat Last
History...
Grease Pencil:
Draw
Line
Poly
Erase
Use Sketching Sessions
Ruler/Protractor
Rigid Body Tools
Operator
User Ortho
(1) mario
View Search
All Scenes
Scene
RenderLayers
World
Camera
Lamp
mario
Add Modifier
View Select Object
Object Mode
Global
View Marker Frame Playback
Start: 1
End: 250
1
No Sync

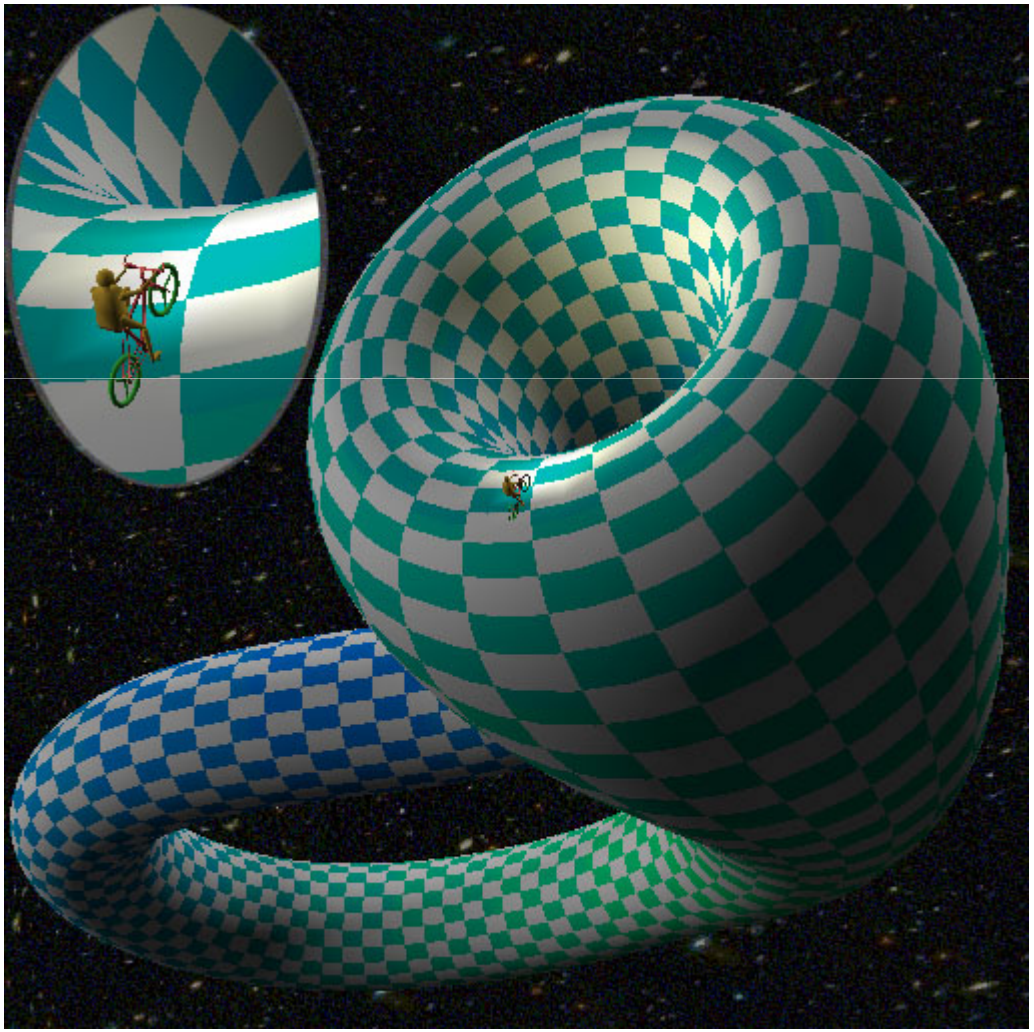
Möbius band



Klein bottle

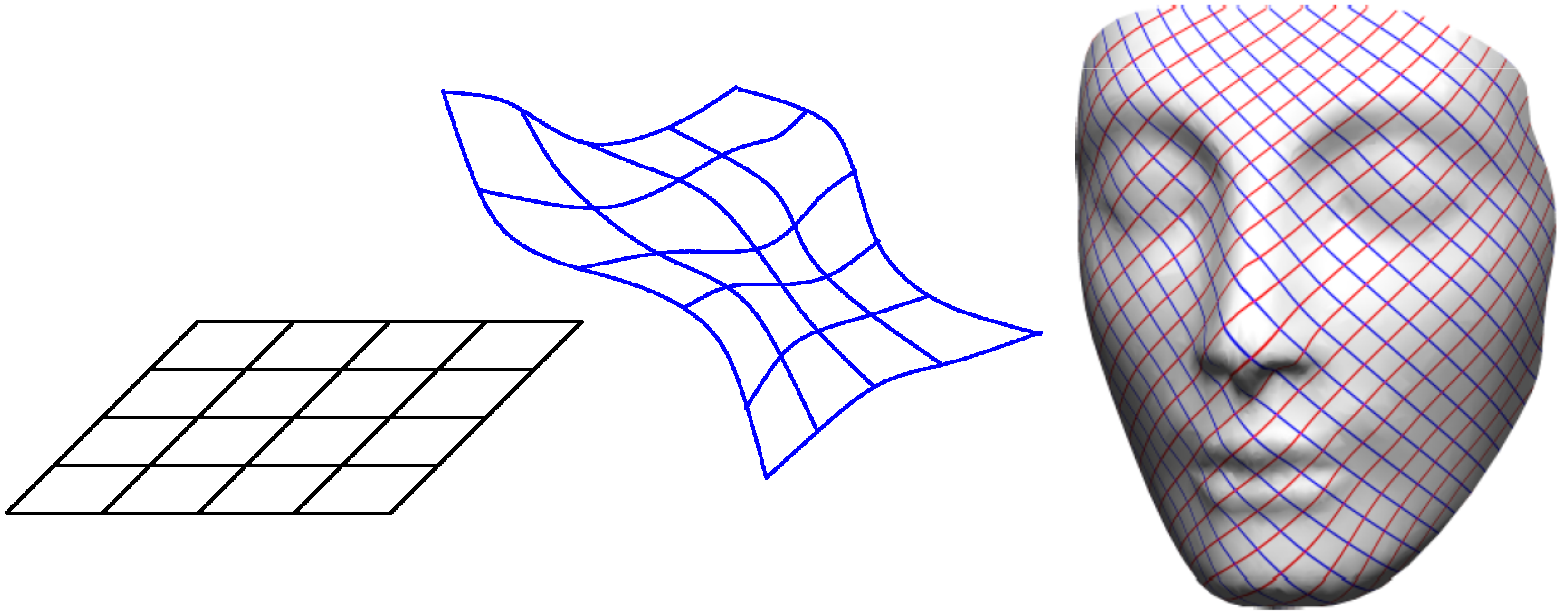


Klein bottle



Homeomorphic surfaces

These surfaces are topologically-equivalent (homeomorphic) to a square:

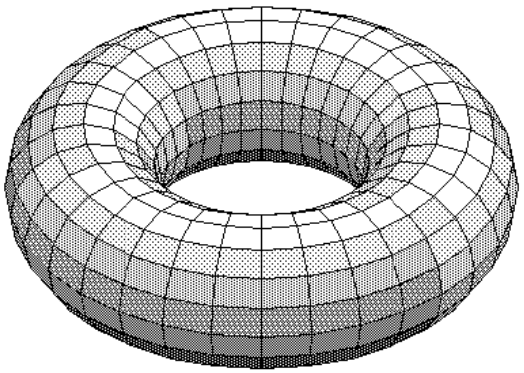


Homeomorphic surfaces

These surfaces are topologically-equivalent (homeomorphic) to a sphere:

Homeomorphic surfaces

- These surfaces are topologically-equivalent (homeomorphic) to a torus:



Homeomorphic surfaces

These surfaces are topologically-equivalent (homeomorphic) to a doble torus:

Bibliography

Martti Mäntylä. 1987. *An Introduction to Solid Modeling*. Computer Science Press, Inc., New York, NY, USA.

- Chapter 1 (introduction to solid modeling)
- Chapter 3
  - 3.2 A three-level view of modeling
  - 3.3 Mathematical models of solids
  - 3.4 Point-set models
  - 3.5 Surface-based models (up to 3.5.2)