

GEOMETRICIAN'S VIEWS

SURFACE



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RESEARCHER VIEW

The Klein bottle is both the name of a purely abstract surface, and one of its representations in usual space as a surface that self-intersects along a circle. As part of a film project on topology, I made a short clip consisting of a tomography of a Klein bottle. The use of a 3D renderer to manage light diffusion and complex lighting gives a semi-realistic touch that on the one hand can help the understanding of the animation, and on the other hand has a certain artistic quality.

Researcher: Arnaud Chéritat



ARTISTIC VIEW

Topology has its icons. The cloverleaf knot is one. The Klein bottle is another. This print brings them together in a country setting appropriate to the title of the former. The model is first created by computer, then key points are transferred to a copper plate, on which the design is then patiently engraved. A special texture embellishes the image, while helping to visualise the structure of this self-intersecting surface.

Artiste : Patrice JEENER



Common view

TMixing the two ideas, here is a cut of another 3D model of the surface engraved by Jeener, rendered with the texture used in the Chéritat animation. The height of the cut was chosen to cut passes, places where the tangent plane is horizontal without the altitude being either maximum or minimum.

