

Knots and Multiple Möbius Band Minimal Surfaces

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The 2-3 torus knot admits a minimal surface consisting of two Möbius bands that share edges and alternately cross over each other. In Figure 1 we see a red Möbius band and a blue Möbius band on a 2-3 torus knot. There is a space in the center.

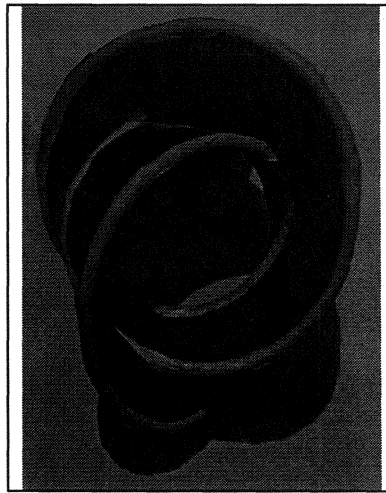


Figure 1

Another view is shown in Figure 2 where we see the blue band crossing the red band at the top and the red band crossing the blue band at the bottom.

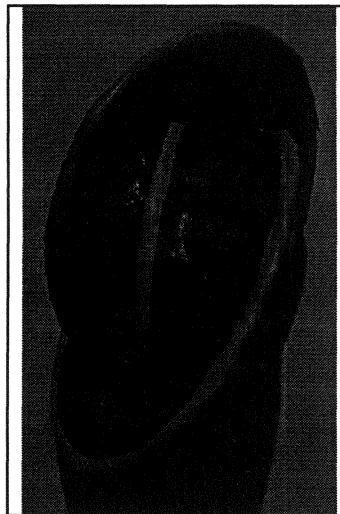


Figure 2

The 3-4 torus knot admits a minimal surface consisting of three Möbius bands that share edges and alternately cross over each other. In Figure 3 there is a minimal surface on a 3-4 torus knot consisting of red, blue and green Möbius bands with a space in the center. We see the blue band crossing over the red and green bands at the top. In the center the green band crosses over the blue and red bands. The detail in Figure 4 shows how the green band moves to the right of the red band after crossing over the blue and red bands. Similarly, the blue band will move to the right of the green band after crossing over the red and green bands.

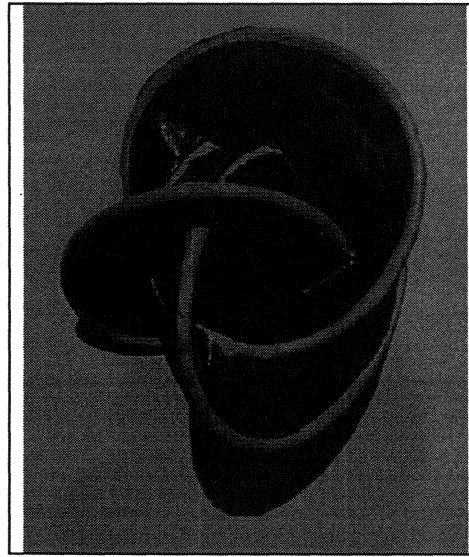


Figure 3

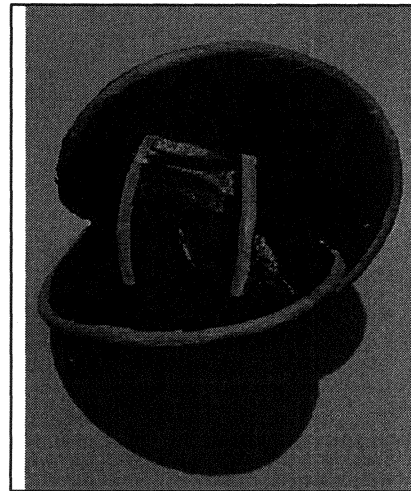


Figure 4

In general, the n - $(n+1)$ torus knot will admit a minimal surface consisting of n Möbius bands that share edges and alternately cross over each other.