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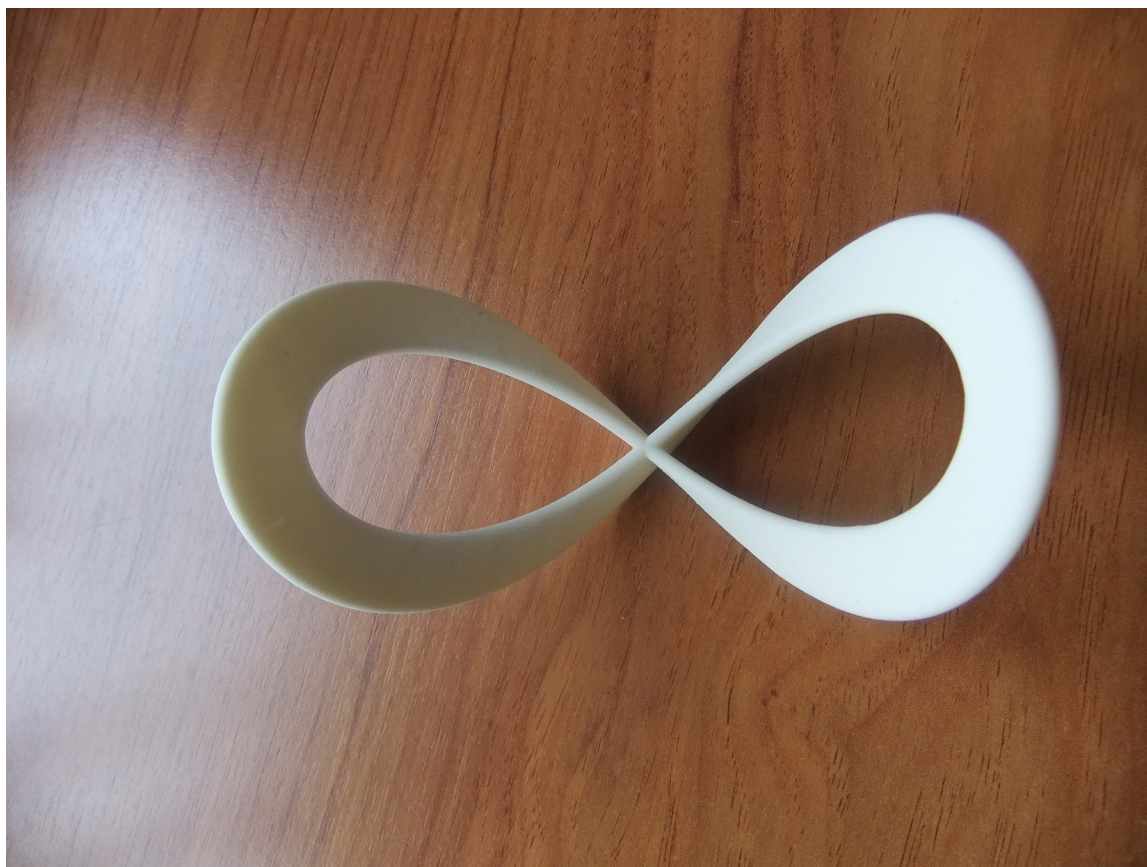
Infinite on the sphere lemniscate
102x52x52 mm
3d printed on UV Resine
2012

My 3d art is currently formed by a set of several hundred figures, most of them "wire sculptures" with axial symmetry given abstract and beautiful objects. Finding rules governing objects and beauty is one of my goals. Finding distinguished and / or spectacular copies, one of my hobbies.

In this occasion the theme is about the spherical curves that are represented in three examples:
· Infinite on the sphere lemniscate: a curve related to the Viviani curve that is completed by extending the lines between two points giving place to the infinite symbol or the spherical version of the lemniscate curve.
· Triskel in the spherical Lissajous world: This other spherical wire sculpture is formed by an own variant of the 3d Lissajous curve.
· The third one is, again, a combination of cosine and sine functions completed with a 3d program to result a Rose.

Infinite on the sphere lemniscate · All of them, in this kind of 3d curves, have in common that we can see a 2d rhodonea in the z axis direction. In this case, too. Related to both the Viviani and the rhodonea curves, this one is completed extending the lines between two points giving place to the infinite symbol or the spherical version of the lemniscate curve.

Triskel in the spherical Lissajous world
100x103x96.6 mm
3d printed on UV Resine
2012

Rose
100x104x24.8 mm
3d printed on UV Resine
2012

Triskel in the spherical Lissajous world · Triskel in the spherical Lissajous world: This spherical wire sculpture is formed by my own variant of the 3d Lissajous curve, a Lissajous pattern on a spherical surface. It`s possible to create spherical artistic designs with Lissajous 3d curves that are 2d curves but generated using spherical coordinates. Azimuthal and polar angles undergo oscillations while the radius is kept constant. Well, this is one of the multiple 3d curves possible in the sphere, but very many others, even no spherical curves, are related. You can see some of these spherical and not spherical Lissajous curves in shapeways.com searching for regueiro.

Rose · There are many 2d curves with flower form like many cases of rhodonea, of equation r=a*cos(k*theta) An example is r=a*cos(5/6*theta) But there are no examples of the same curve in 3d. Until this curve with simple equation with cosines and sines. Which are the equations? A problem to resolve. In fact, the equation allows us to construct many other similar 3d curves. If you visit shapeways.com site and search for regueiro you will see many other variants of rhodonea 3d curves, which have as a characteristic that we can always see 2d rhodoneas in the z axis direction.