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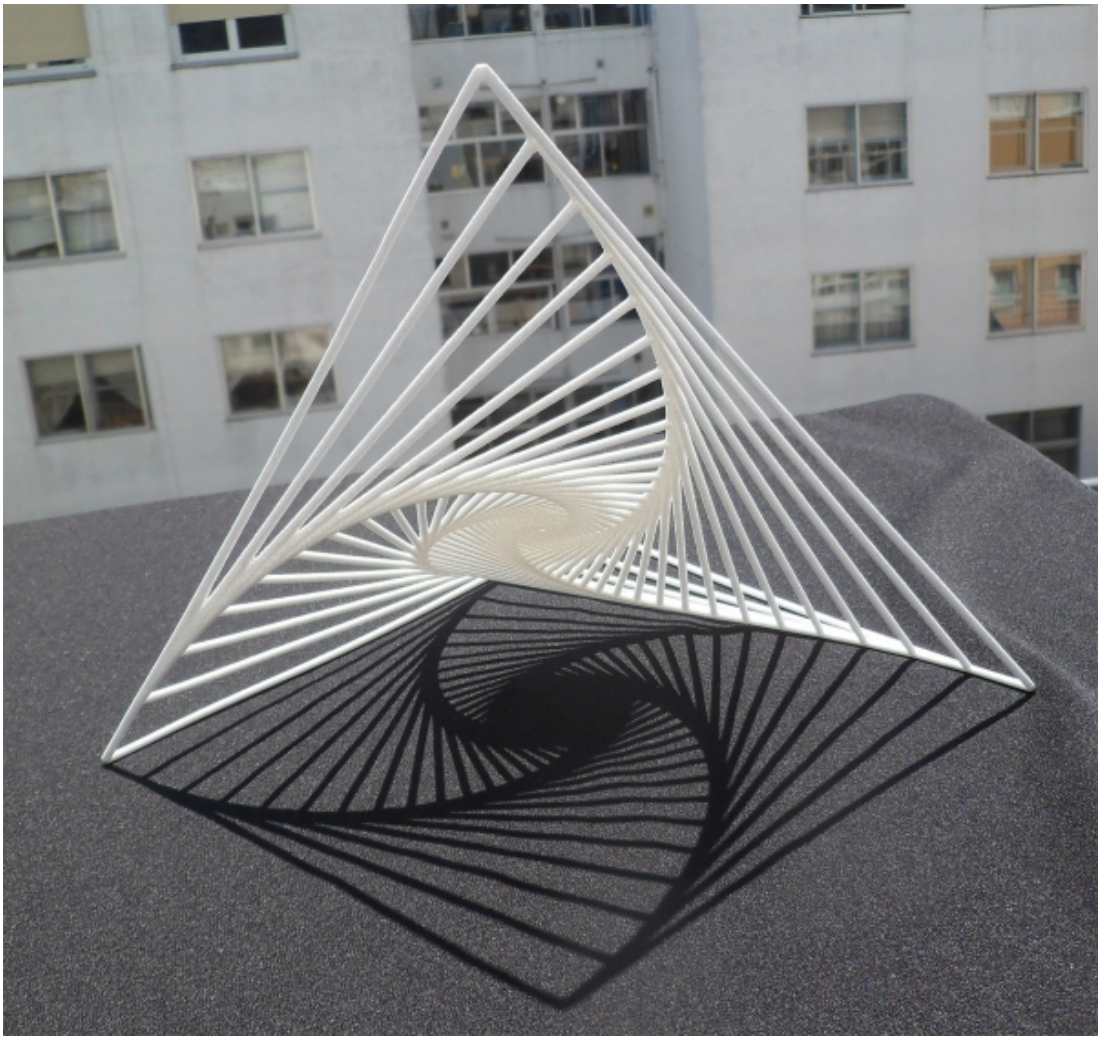
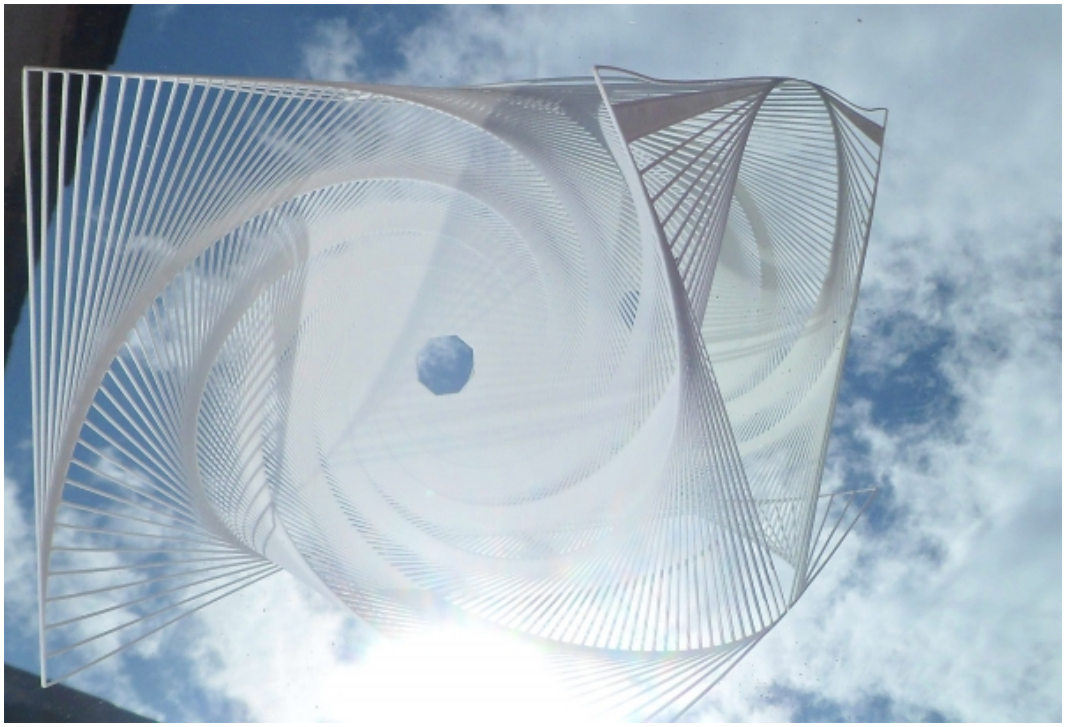
I have found rules that are appropriate and very productive for lsystem both in 2D and 3D. These are the first steps of my interest in the production of art with mathematical forms. My 3d art is currently formed by a set of several hundred figures, most of them “wire sculptures” with axial symmetry that give place to abstract and beautiful objects. Finding the rules that govern objects and beauty is one of my goals. To find the order and beauty in the complexity rules, one of my hobbies.

In this occasion the theme is about the 3d pursuit curves and lsystems that are represented in the three examples:
In www.shapeways.com/shops/regueiro you can have a look at them or buy some of this type of 3d printer works, specially some curves of persecution made by all kind of possible variants and a hundred of 3d lsystems.



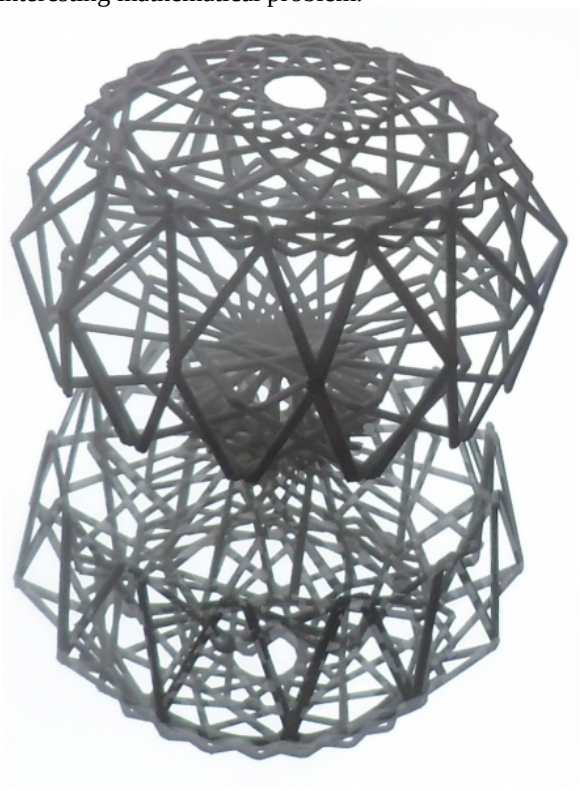
Logo
10.326 x 20.484 x 20.484 cm
Printer 3d plastic
2013

Pursuit curves or persecution curves are in the logo of Bridges Pécs 2010. Several mathematical newsletters use this curve as logo. What do if translate this curve to three dimensions?
With two perpendicular planes in his definition, letting add several (two or four) figures to form a pyramid or a octahedron.
With his characteristics four logarithmic spirals.
I propose this figure like the Enschede Bridges Logo.



Hurricane Sandy
22.996 x 22.996 x 22.996 in cm
Printer 3d plastic
2013

For some people it may not be very orthodox to use a public tragedy like Hurricane Sandy to identify a workart, but what I am trying to show is that persecution curves in three dimensions correspond to physical objects that we know and recognize as hurricanes, spiral galaxies, or even the drain of your bathtub and that all of them obey the same laws, the Coriolis Effect.
Thus I find that this artwork suggest that there exists the possibility of governing hurricanes modelling them as prosecution curves in three dimensions. In these examples the lines are traced over the edges of platonic solids.
This object is created with a computer program and, by just varying some elements of it, other similar 3d objects may be born to light. If the program, that is based in 3d persecution curves, is able to visualize the physical phenomenon, that means that these curves will be basic for a model capable to interpret and control these phenomena. There it goes an interesting mathematical problem.



What's the reason why the result of many lsystem that I work with appear to be ordered? During several years I have been thinking about the reason. Emergence was the answer. We have a complex system with a set of gramatical rules and a set of 3d angles. With certain rules and certain angles, it's almost compulsory to obtain a necesary and ordered result, that indicates the existence of a set of implicit 3d positional theorems that are not described or are very difficult to be described.
The most amazing thing of these results is that the figure 3d that you get seems to have intentionality. It is as if you had passed several months thinking about its final details and had studied structure to do such a delicate and recognizable object.
Something like a Belousov- Zhabotinsky reaction but with a abstract gramatical, and not chemical, origin.
We are in presence of the birth of the emergence of order.

Emergence of Order
7.4 x 8.3 x 9.0 in cm
Printed 3d in plastic white and flexible
2013

Enschede **2013**