How to use EasySpring & Braid

v1.0
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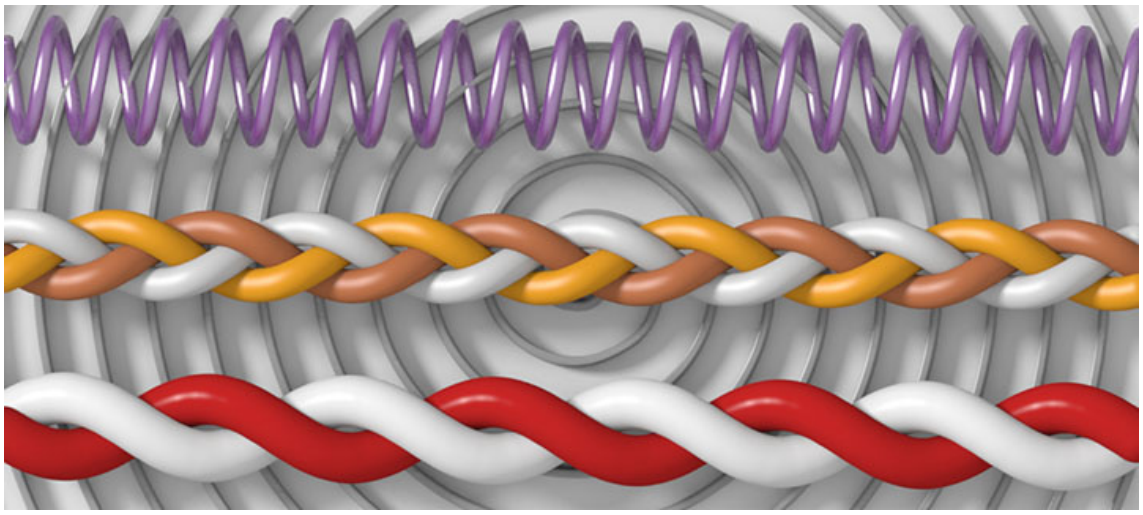
Author: Manriki



1. What is EasySpring & Braid?

It is a script package for MODO 701(or later) which enables you to create curves in the shape of spring, spiral, braid with a few operations.

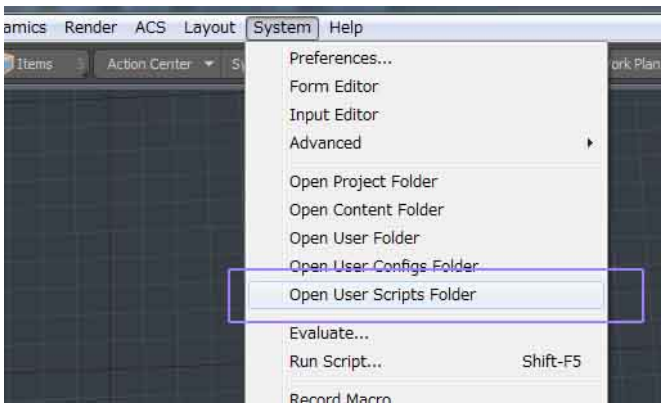
-EasySpring (eSpring.py) -- springs, spirals(Archimedean spiral only)
-EasyBraid (eBraid.py) -- braids with 2 or 3-strands (2-strands mean twisted-pair)

2. Installation Instructions

After you unzip archives,
put the 2 scripts
"eSpring.py" and "eBraid.py"
into the User Script Folder.

And everything is ready.

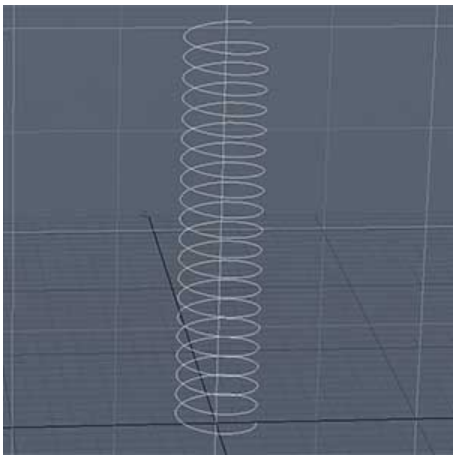
(You can open User Script Folder
from the System menu.)



3. Basic usage

(a)create springs

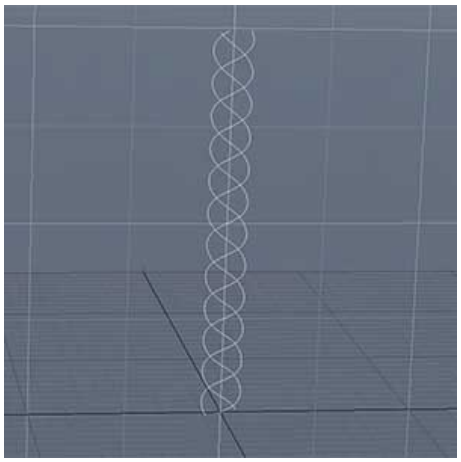
Run the script "eSpring.py".
And,”New Spring” will be created
in a new mesh layer.



(b)create braids with 3-strands

Run the script "eBraid.py".
And,”New Braid” will be created
in a new mesh layer.

With this operation, all 3 tassels will be
merged in one mesh layer.
But, you can create 1 mesh layer by 1 tassel
with an option(to be mentioned later).

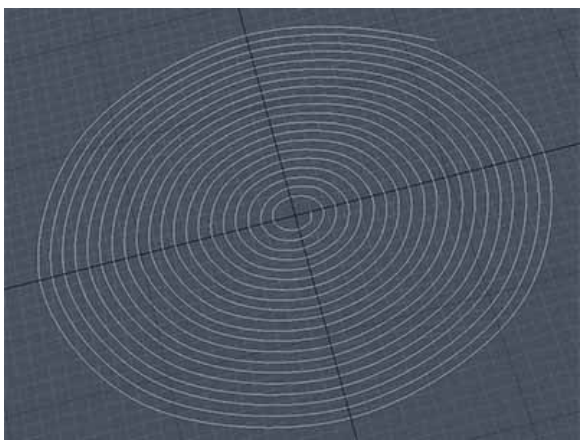


(c)create spirals

Execute a command like below
via the command line:

@eSpring.py L=0 SP=0.1

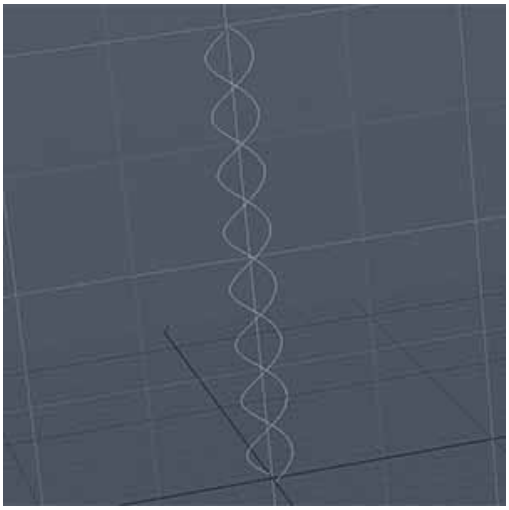
And,”New Spiral” will be created
in a new mesh layer.
The meanings of options will be
mentioned later.



(d) create braids with 2-strands
(twisted-pair)

Execute a command like below via the command line:

@eBraid.py NT=2



And,"New Braid" will be created in a new mesh layer.
The meanings of options will be mentioned later.

4. Command-line options

You can change the length, radius, and the other attributes of springs(braids) with command-line options.
The format is like below:

```
@eSpring.py L=2 R=0.05 N=30 ……
```

- options are delimited by space
- please don't forget "=".
- case-insensitive
- any order is OK

It is also the same with eBraid.

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Option lists are shown below:

<Options of eSpring.py>

Option-Name	meanings	details
L	Length	Length of spring (m) (approx.)
N	Number of turns	Number of turns in a spring (approx.)
R	Radius	Radius of basic coil (m) (approx.)
RN	RoundNess	RoundNess of coil. (vertex num per 1 coil.) If you increase this value, the shape of coil will be closer to true circle. But vertex number will increase.
SP	Spreading rate of radius	Spreading rate of radius (linier) --This means, if you set this value greater than 0 , and “L=0”, the shape of spring will be “spiral”.
DR	DiRection invert	If you set this value “1”, the screw direction will be inverted. The default value is 0.
RC	Render Curve	If you set this value “1”, “Render Curves” option will be turned on. The default value is 0.

<Options of eBraid.py>

Option-Name	meanings	details
L	Length	Length of braid (m) (approx.)
NW	Number of Waves	Total number of waves per 1 tassel(strand) (approx.) If you increase this value, the braid will be finer.
TH	THickness	Thickness of braid (m) (approx.)
W	Width	Width of braid (m) (approx.)
NT	Number of Tassels	Number of Tassels(2 or 3) If you set this value “2”, a twisted-pair will be generated. If you set this value “3”, a braid with 3-strand will be generated. The default value is 3.
PR	PRecision	PRecision level (vertex number per 1 wave period.) If you increase this value, the total shape will be smooth. But vertex number will increase.
DR	DiRection invert	If you set this value “1”, the screw direction will be inverted. The default value is 0.
O	One mesh	If you set this value “1”, all tassels will be merged in one mesh. If you set this value “0”, 1 mesh will be generated by 1 tassel. The default value is 1.

RC	Render Curve	If you set this value “1”, “Render Curves”option will be turned on. The default value is 0.

5. How to change the default values

If you want to use these scripts without any options (use like mesh presets),
you can change the default values as below.

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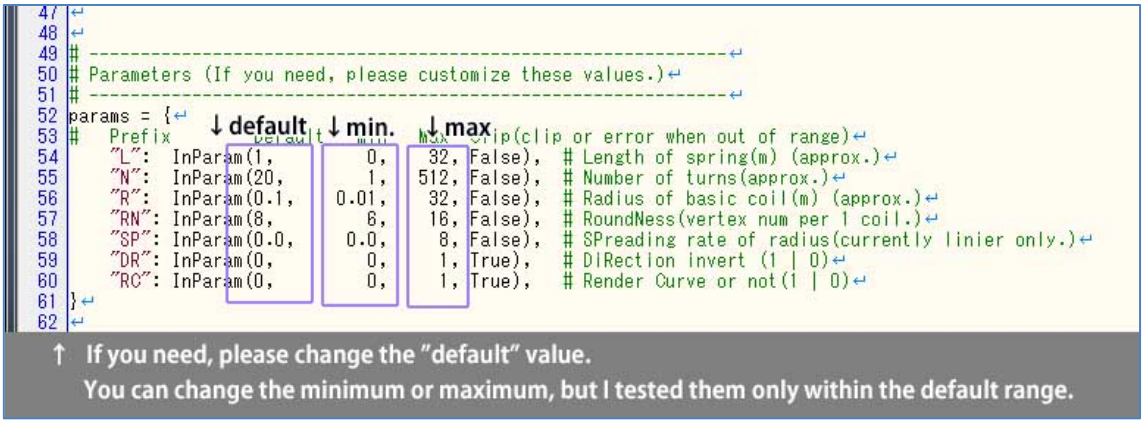
Open the script in a text editor, and change the default values in “Parameters” table
(near line number 50).



and run the new scrpt.

6. NOTE

1) They were tested on MODO701 SP5 and MODO801 SP3 (Windows7 64bit)

2) Sorry, I did’nt confirm operations of these scripts on Macintosh.
   If you have any trouble on Mac, Please contact me
   (see the next “If you have any questions”).

3) If you use MODO801 sp2, don't execute UNDO after using EasyBraid.
   This operation may cause MODO application error (caused by UNDO of mesh merge command).
   In MODO801 sp3, this problem was solved, and MODO701 is OK.

7. If you have any questions

If you have any questions, please contact me via:

1)The Foundry's community forum

"Forum - Scripting & Macros"

http://community.thefoundry.co.uk/discussion/forum.aspx?f=119

Topic

"Create spring, spiral, and braid curves in a second"

2)Personal contact form

http://riki.hungry.jp/blog/?page_id=317

I'm based in Japan, but can read English (sorry, not very good at writing) .

--That's all

enjoy.