

PSTricks

pst-knot

Plotting special knots; v.0.01

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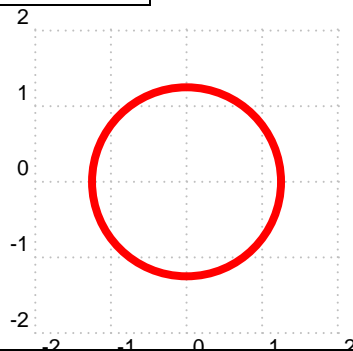
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1 introduction

This is the very first try of drawing knots. The package uses the PostScript subroutines from the file `psMath.pro` from Matthias Buch-Kromann.) Currently there is only one macro with two mandatory arguments, the origin of the image and the knot type. The following list shows all available knot types.

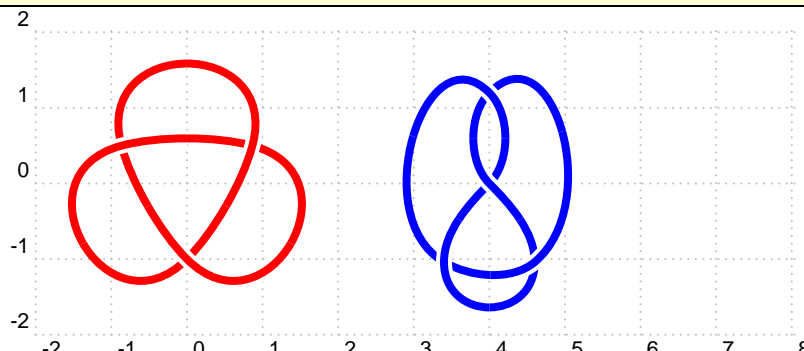
`\psKnot [Options] (x,y) {knot type}`



```

1 \begin{pspicture}[showgrid=true](-2,-2)(2,2)
2   \psKnot[linewidth=3pt,linecolor=red](0,0){0-1}
3 \end{pspicture}

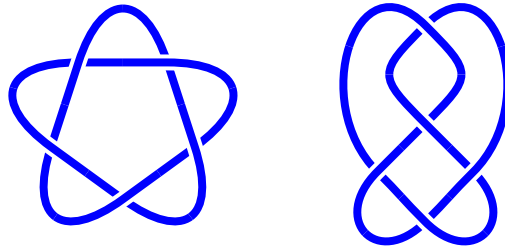
```



```

1 \begin{pspicture}[showgrid=true](-2,-2)(8,2)
2   \psKnot[linewidth=3pt,linecolor=red](0,0){3-1}
3   \psKnot[linewidth=3pt,linecolor=blue](4,0){4-1}
4 \end{pspicture}

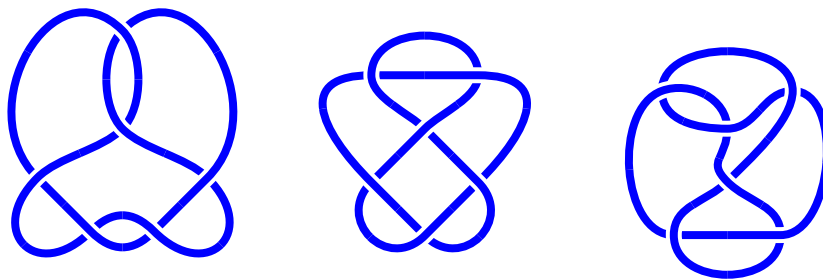
```



```

1 \begin{pspicture}(-2,-2)(8,2)
2   \psKnot[linewidth=3pt,linecolor=blue](0,0){5-1}
3   \psKnot[linewidth=3pt,linecolor=blue](4,0){5-2}
4 \end{pspicture}

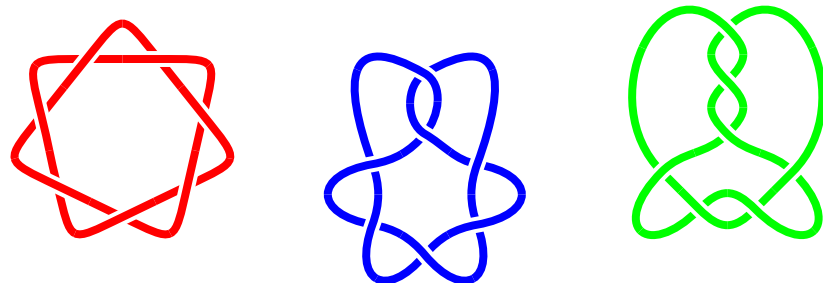
```



```

1 \begin{pspicture}(-2,-2)(10,2)
2   \psKnot[linewidth=3pt,linecolor=blue](0,0){6-1}
3   \psKnot[linewidth=3pt,linecolor=blue](4,0){6-2}
4   \psKnot[linewidth=3pt,linecolor=blue](8,0){6-3}
5 \end{pspicture}

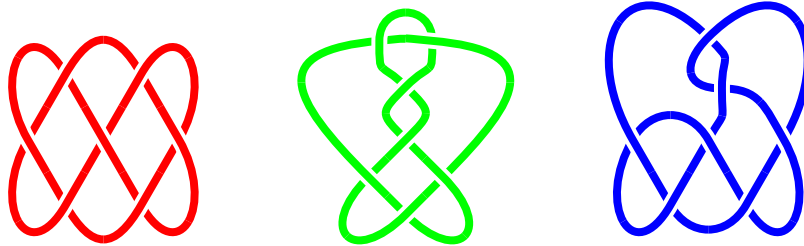
```



```

1 \begin{pspicture}(-2,-2)(10,2)
2   \psKnot[linewidth=3pt,linecolor=red](0,0){7-1}
3   \psKnot[linewidth=3pt,linecolor=blue](4,0){7-2}
4   \psKnot[linewidth=3pt,linecolor=green](8,0){7-3}
5 \end{pspicture}

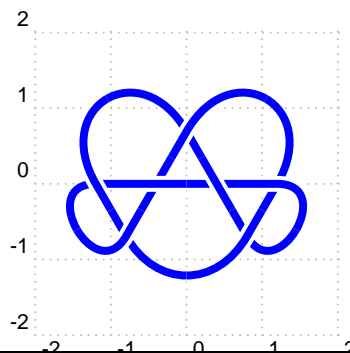
```



```

1 \begin{pspicture}(-2,-2)(10,2)
2   \psKnot[linewidth=3pt,linecolor=red](0,0){7-4}
3   \psKnot[linewidth=3pt,linecolor=green](4,0){7-5}
4   \psKnot[linewidth=3pt,linecolor=blue](8,0){7-6}
5 \end{pspicture}

```



```

1 \begin{pspicture}[showgrid=true](-2,-2)(2,2)
2   \psKnot[linewidth=3pt,linecolor=blue](0,0){7-7}
3 \end{pspicture}

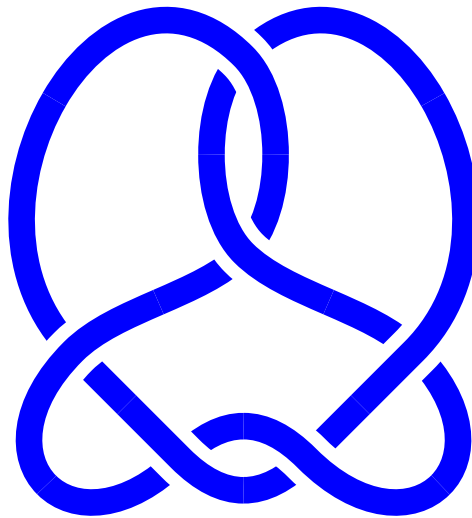
```

2 Special settings

There exists three special optional arguments for the macro `\psKnot`.

2.1 Scaling

The image can be scaled with `scale`, which can take one or two values for `x` and `y` scaling. For only one value it is scaled for `x` and `y` with the same value. The default is 1 1.



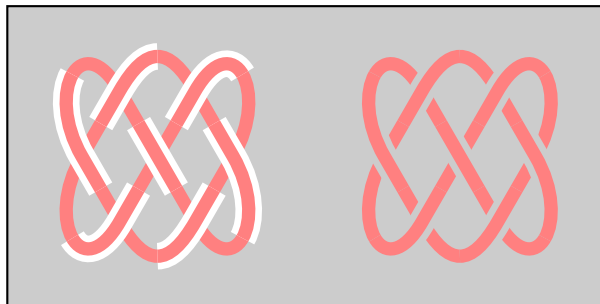
```

1 \begin{pspicture}(-4,-4)(4,4)
2   \psKnot[linewidth=5pt,linecolor=blue,knotscale=2](0,0){6-1}
3 \end{pspicture}

```

2.2 Border color

The background color of the border can be controlled by `knotbgcolor` with only a numerical value of $[0..1]$ for a grayscale color. It makes only sense for a colored background to get the same color for the crossing.



```

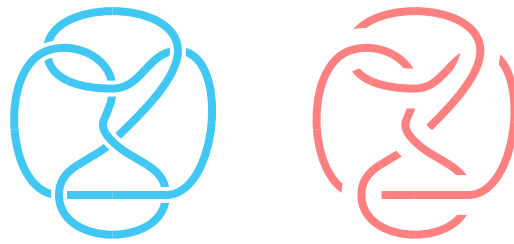
1 \begin{pspicture}(-2,-2)(6,2)
2   \psframe[fillcolor=black!20,fillstyle=solid](-2,-2)(6,2)
3   \psKnot[linewidth=5pt,linecolor=red!50](0,0){7-4}
4   \psKnot[linewidth=5pt,linecolor=red!50,
5     knotbgcolor=0.8](4,0){7-4}
6 \end{pspicture}

```

Pay attention that `black!20` is the same as 0,8 of gray.

2.3 Border width

The width of the border is controlled by the keyword `knotborder` and it is preset to 2 as a factor to the current linewidth. It must at least be the currentlinewidth (1.0).



```
1 \begin{pspicture}(-2,-2)(6,2)
2   \psKnot[linewidth=3pt,linecolor=cyan!60](0,0){6-3}
3   \psKnot[linewidth=3pt,linecolor=red!50,
4     knotborder=5](4,0){6-3}
5 \end{pspicture}
```

3 List of all optional arguments for `pst-knot`

Key	Type	Default
<code>knotborder</code>	ordinary	2
<code>knotbgcolor</code>	ordinary	1
<code>knotscale</code>	ordinary	1 1

References

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- [3] Laura E. Jackson and Herbert Voß. Die Plot-Funktionen von `pst-plot`. *Die T_EXnische Komödie*, 2/02:27–34, June 2002.
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- [11] Timothy van Zandt and Denis Girou. Inside PSTricks. *TUGboat*, 15:239–246, September 1994.

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