Optimizing the Street Safety of a Unicycle Through Maths-Inspired Decorations

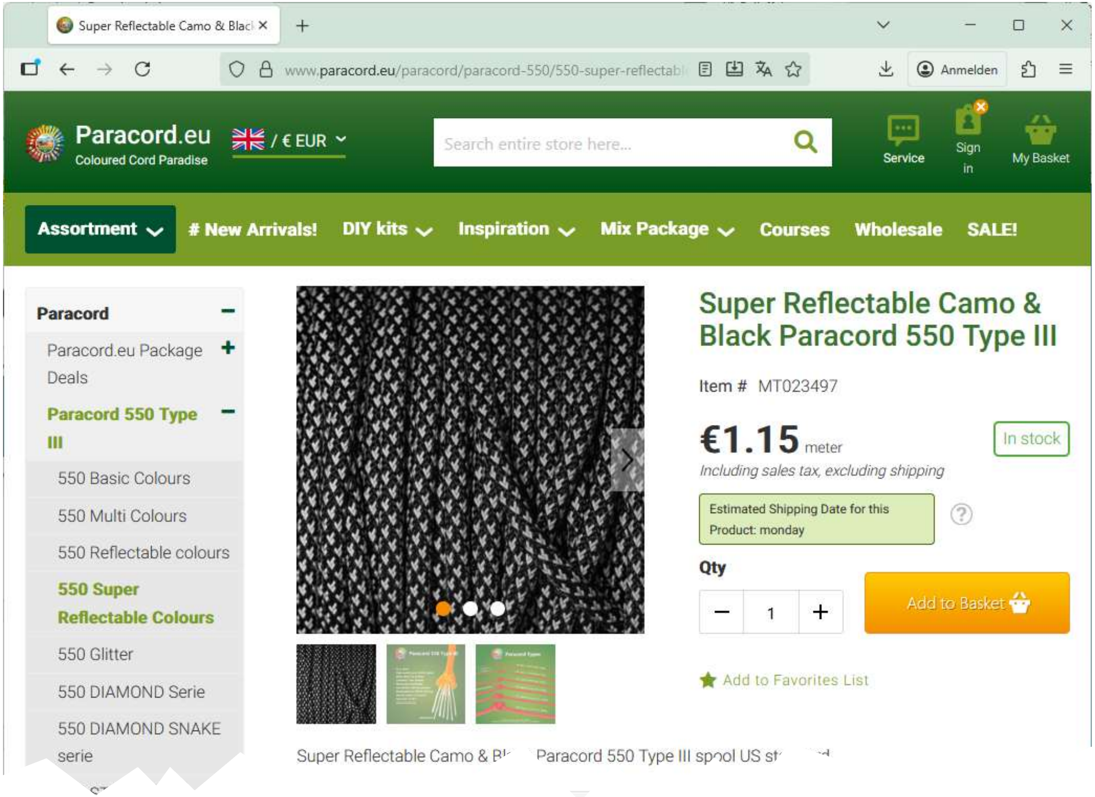
Kristin Ohlmann

Optimizing the Street-Safety of a Unicycle

Kristin Ohlmann

Optimizing the Street-Safety of a Unicycle

Kristin Ohlmann



Super Reflectable Camo & Black Paracord 550 Type III

Item # MT023497

€1.15 meter

In stock

Including sales tax, excluding shipping

Estimated Shipping Date for this Product: monday

Qty

− 1 +

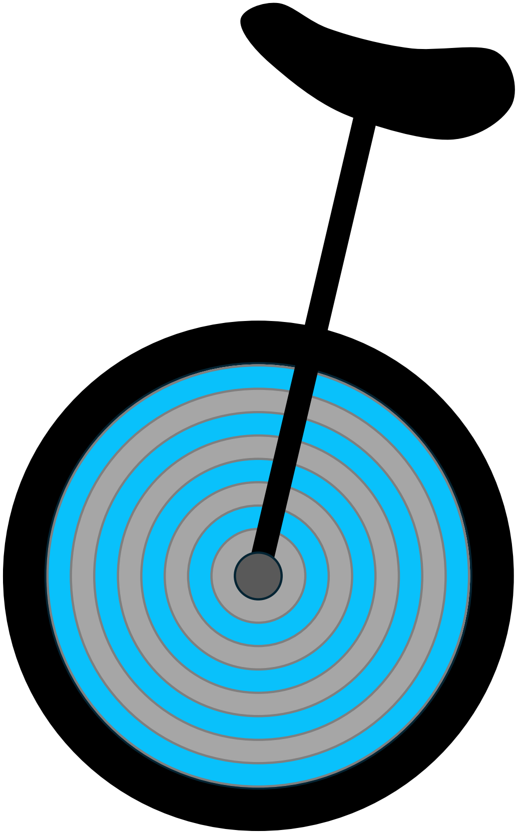
Add to Basket

Add to Favorites List

Super Reflectable Camo & Bl Paracord 550 Type III spool US st

Optimizing the
Street-Safety
of a Unicycle

Kristin Ohlmann

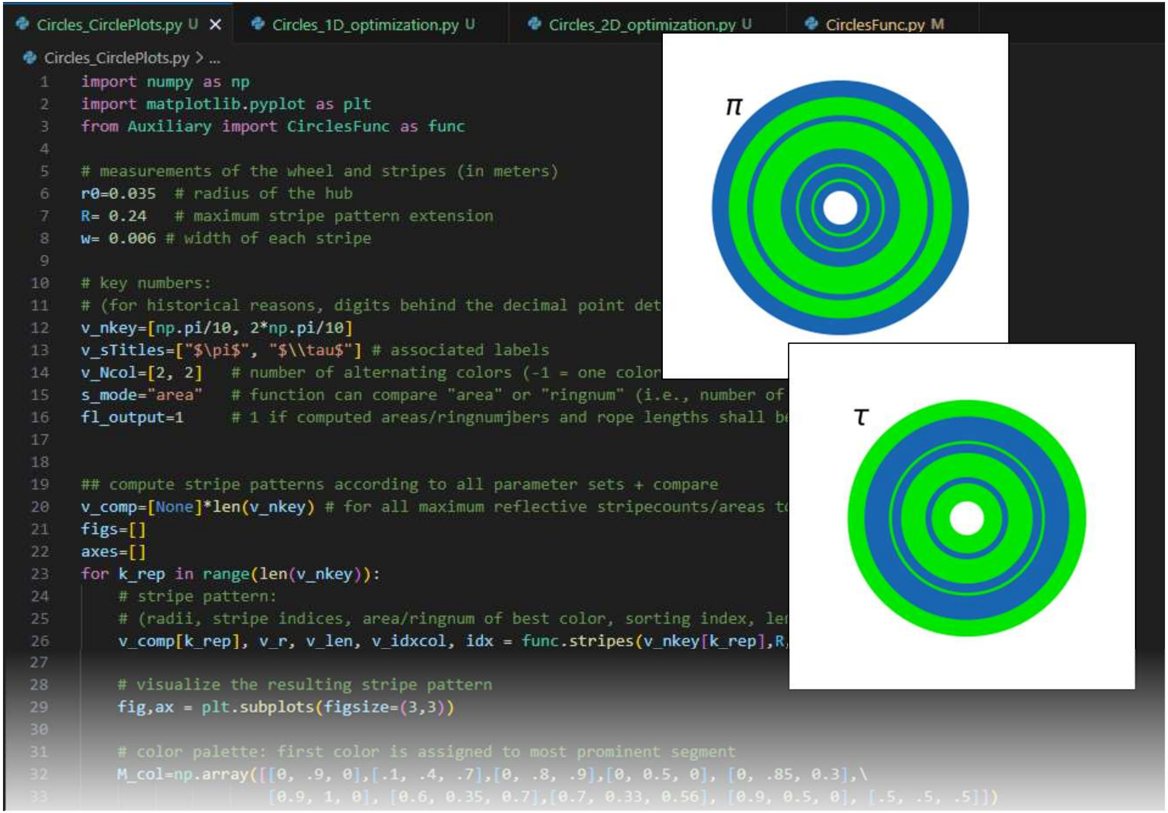


Optimizing the Street-Safety of a Unicycle

Kristin Ohlmann

Optimizing the Street-Safety of a Unicycle

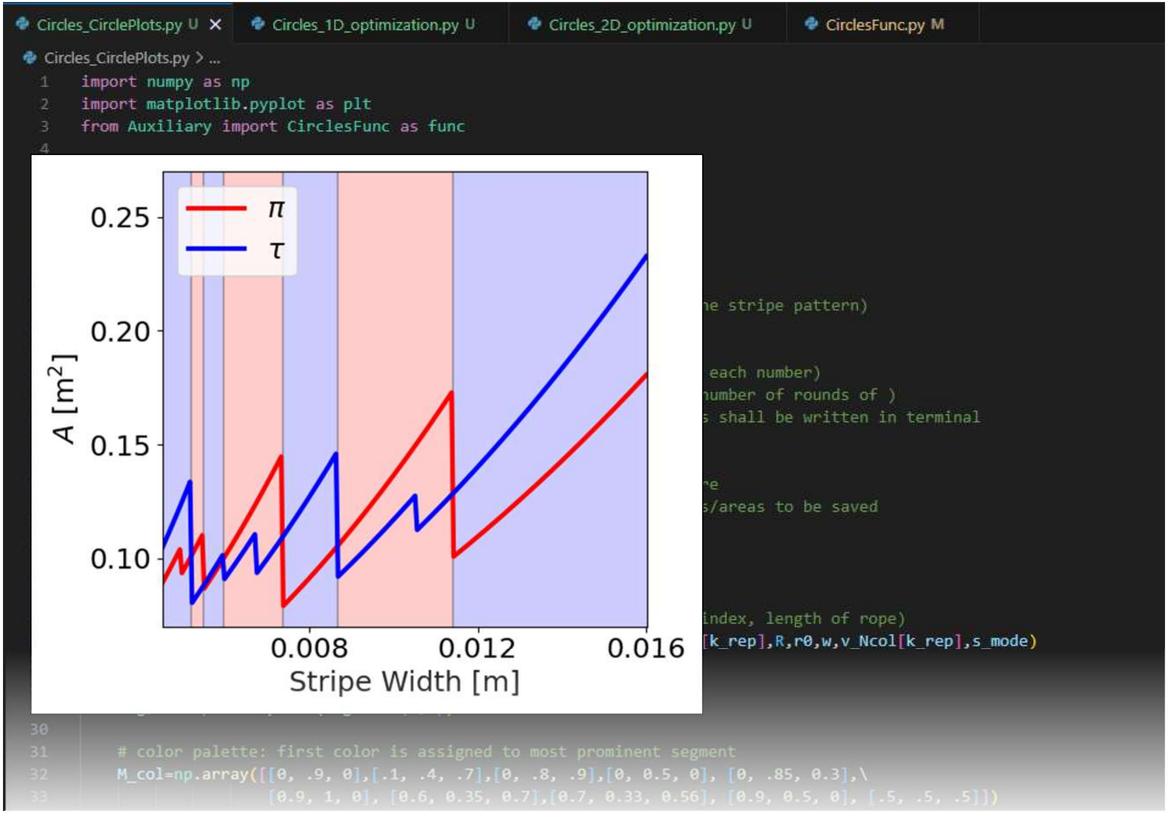
Kristin Ohlmann


Circles_CirclePlots.py U ×
Circles_1D_optimization.py U
Circles_2D_optimization.py U
CirclesFunc.py M
Circles_CirclePlots.py > ...
π
τ

```
import numpy as np
import matplotlib.pyplot as plt
from Auxiliary import CirclesFunc as func

# measurements of the wheel and stripes (in meters)
r0=0.035  # radius of the hub
R= 0.24   # maximum stripe pattern extension
w= 0.006 # width of each stripe

# key numbers:
# (for historical reasons, digits behind the decimal point det
v_nkey=[np.pi/10, 2*np.pi/10]
v_sTitles=["$\pi$", "$\\tau$"] # associated labels
v_Ncol=[2, 2]   # number of alternating colors (-1 = one color
s_mode="area"   # function can compare "area" or "ringnum" (i.e., number of
fl_output=1     # 1 if computed areas/ringnumjbers and rope lengths shall be


## compute stripe patterns according to all parameter sets + compare
v_comp=[None]*len(v_nkey) # for all maximum reflective stripecounts/areas to
figs=[]
axes=[]
for k_rep in range(len(v_nkey)):
    # stripe pattern:
    # (radii, stripe indices, area/ringnum of best color, sorting index, le
    v_comp[k_rep], v_r, v_len, v_idxcol, idx = func.stripes(v_nkey[k_rep],R,

    # visualize the resulting stripe pattern
    fig,ax = plt.subplots(figsize=(3,3))

    # color palette: first color is assigned to most prominent segment
    M_col=np.array([[0, .9, 0],[.1, .4, .7],[0, .8, .9],[0, 0.5, 0], [0, .85, 0.3],\
                    [0.9, 1, 0], [0.6, 0.35, 0.7],[0.7, 0.33, 0.56], [0.9, 0.5, 0], [.5, .5, .5]])
```

Optimizing the Street-Safety of a Unicycle

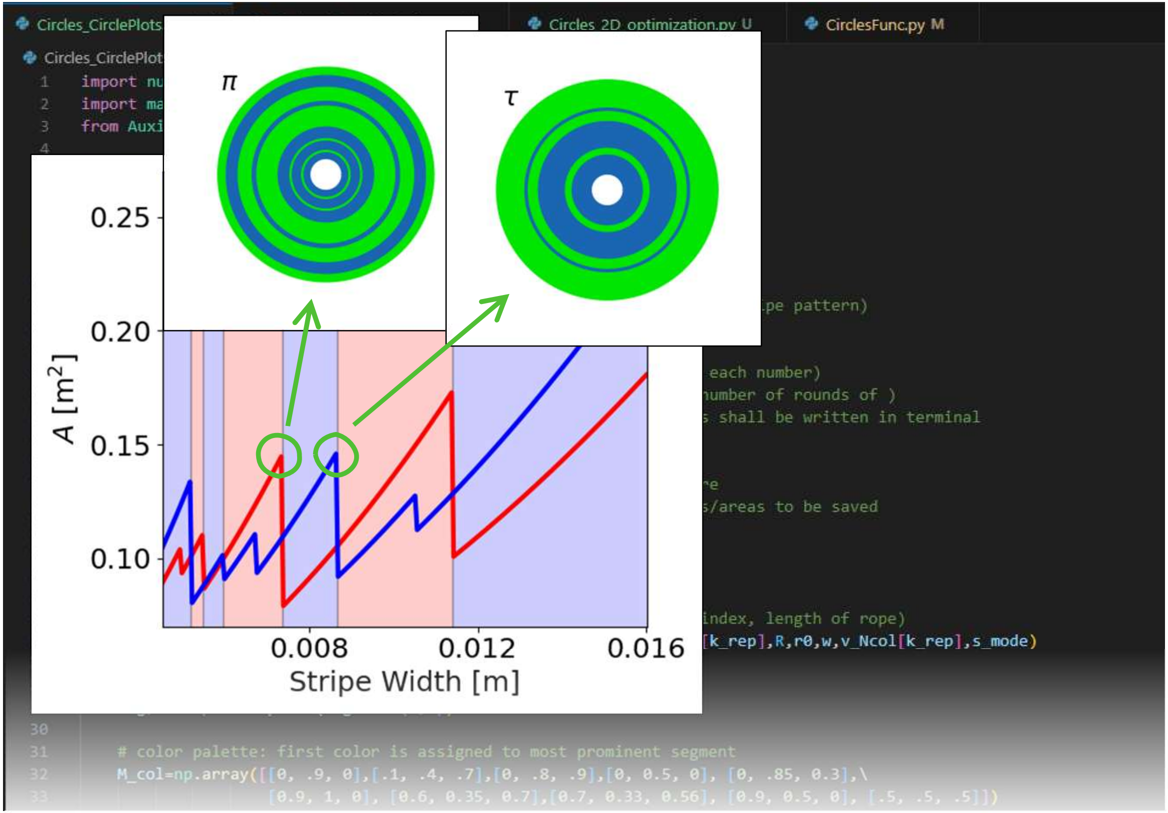
Kristin Ohlmann


Circles_CirclePlots.py U ×
Circles_1D_optimization.py U
Circles_2D_optimization.py U
CirclesFunc.py M
Circles_CirclePlots.py > ...
π
τ
0.25
0.20
0.15
0.10
A [m^2]
0.008
0.012
0.016
Stripe Width [m]

```
import numpy as np
import matplotlib.pyplot as plt
from Auxiliary import CirclesFunc as func

he stripe pattern)

 each number)
number of rounds of )
s shall be written in terminal

re
s/areas to be saved

index, length of rope)
[k_rep],R,r0,w,v_Ncol[k_rep],s_mode)


    # color palette: first color is assigned to most prominent segment
    M_col=np.array([[0, .9, 0],[.1, .4, .7],[0, .8, .9],[0, 0.5, 0], [0, .85, 0.3],\
                    [0.9, 1, 0], [0.6, 0.35, 0.7],[0.7, 0.33, 0.56], [0.9, 0.5, 0], [.5, .5, .5]])
```

Optimizing the Street-Safety of a Unicycle

Kristin Ohlmann



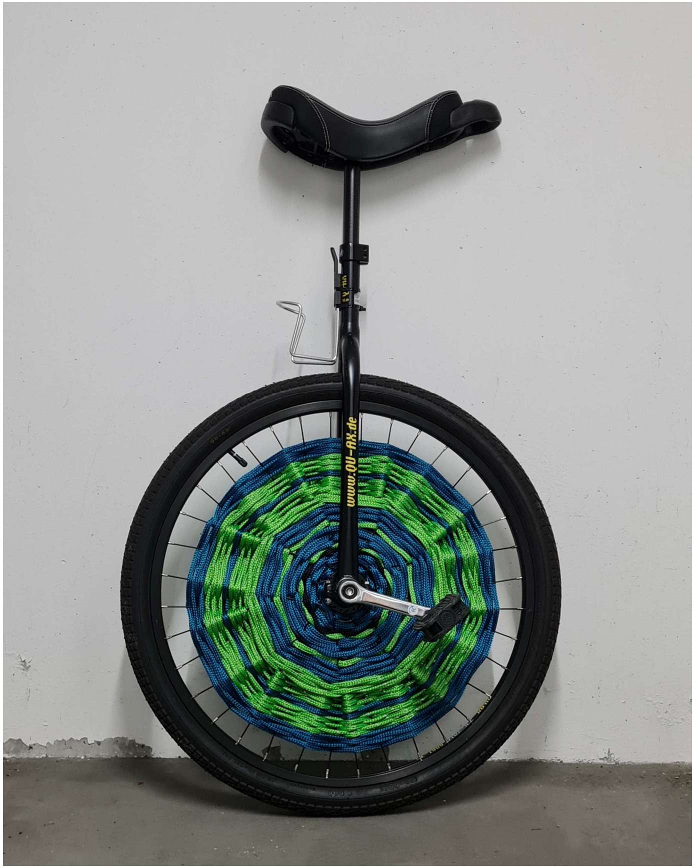
```
import nu
import ma
from Auxi
```

```
pe pattern)
 each number)
number of rounds of )
s shall be written in terminal
re
s/areas to be saved
index, length of rope)
[k_rep],R,r0,w,v_Ncol[k_rep],s_mode)
```

```
    # color palette: first color is assigned to most prominent segment
    M_col=np.array([[0, .9, 0],[.1, .4, .7],[0, .8, .9],[0, 0.5, 0], [0, .85, 0.3],\
                    [0.9, 1, 0], [0.6, 0.35, 0.7],[0.7, 0.33, 0.56], [0.9, 0.5, 0], [.5, .5, .5]])
```

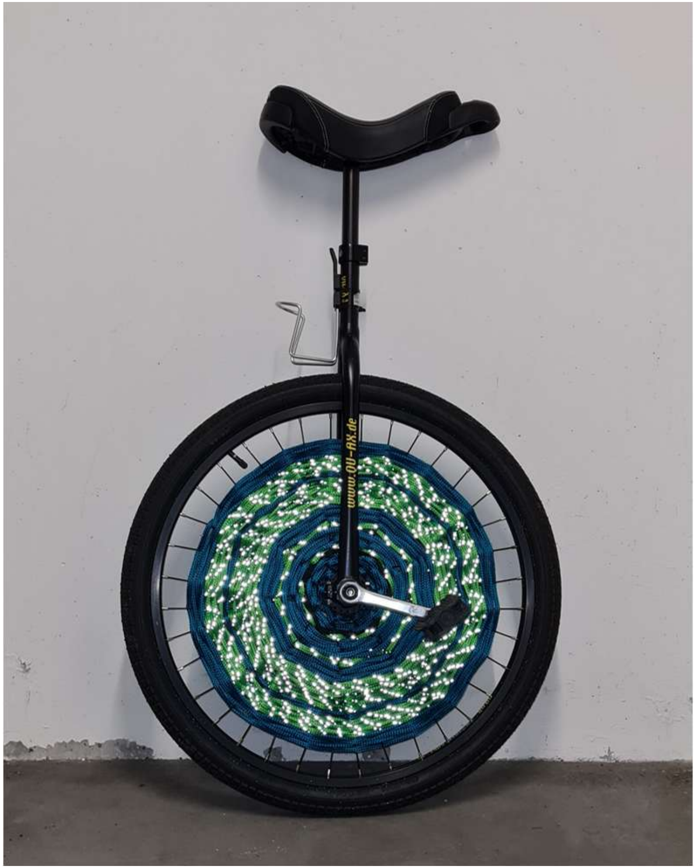
Optimizing the Street-Safety of a Unicycle

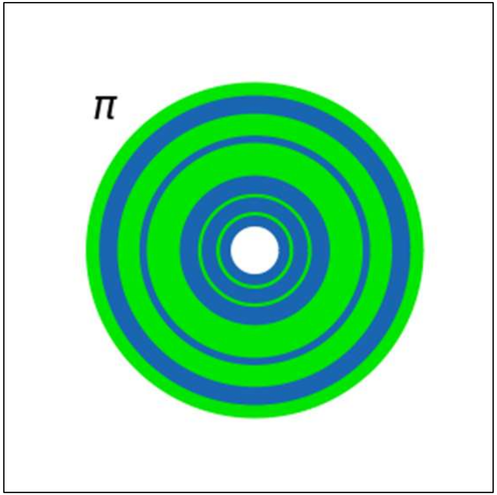
Kristin Ohlmann

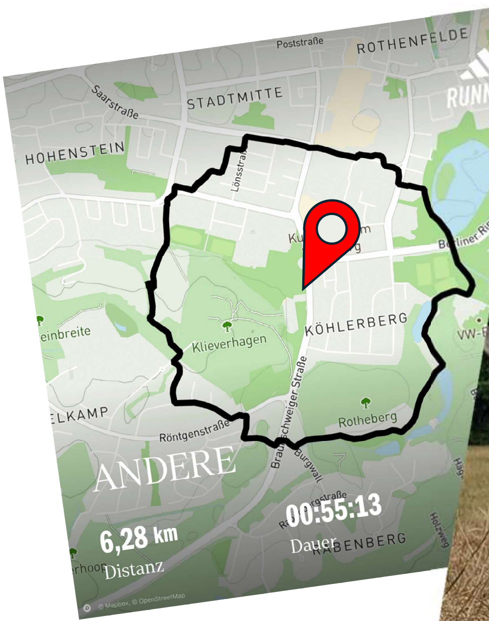


Optimizing the
Street-Safety
of a Unicycle

Kristin Ohlmann



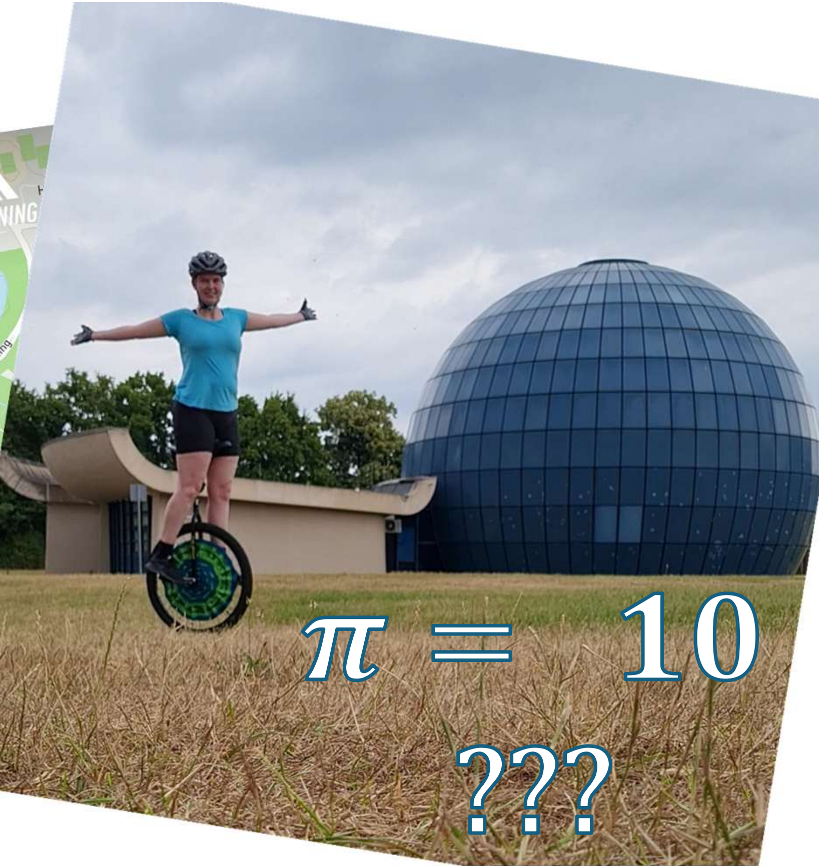




ANDERE

6,28 km
Distanz

00:55:13
Dauer



$\pi = 10$

???

Optimizing the Street-Safety of a Unicycle

Kristin Ohlmann

cloud.uol.de/s/
45YkY3GiF5kcoaR

Optimizing the
Street-Safety
of a Unicycle

Kristin Ohlmann