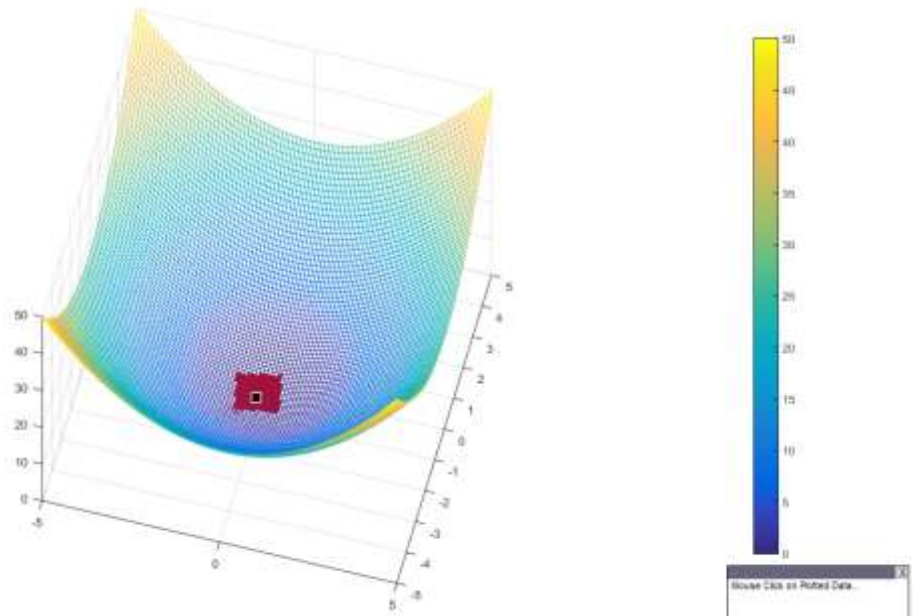


Task one: find a minimum of the function $z(x, y) = x^2 + y^2$

Red zones indicate spread of the points of the population (in Matlab is difficult to show a lot of points at a time)

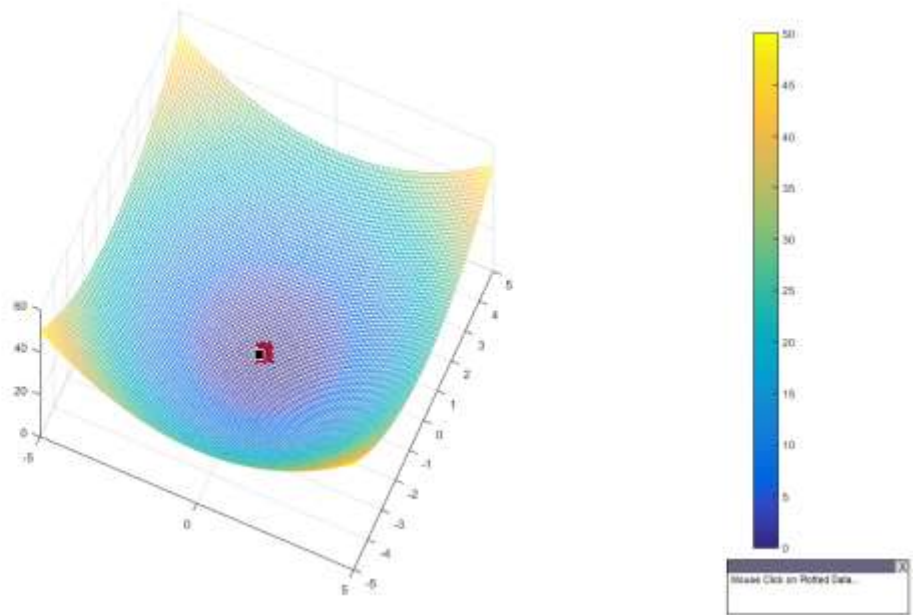
First iteration:

X=-0.0537109 Y=-0.0537109 Z=0.00576973
X=-0.0605469 Y=-0.0605469 Z=0.00733185
X=-0.0664063 Y=-0.0664063 Z=0.0116043
X=-0.0917969 Y=-0.0917969 Z=0.0134583
X=-0.0966797 Y=-0.0966797 Z=0.0186939
X=0.150391 Y=0.150391 Z=0.0452347
X=-0.321289 Y=-0.321289 Z=0.234987
X=0.362305 Y=0.362305 Z=0.262529
X=-0.698438 Y=-0.598438 Z=0.293091
X=0.875977 Y=0.775977 Z=0.31595



Iteration in the middle:

X=-0.0380859 Y=-0.0380859 Z=9.34601e-05
X=-0.0283203 Y=-0.0283203 Z=0.00160408
X=-0.0400391 Y=-0.0400391 Z=0.00352669
X=-0.318359 Y=-0.318359 Z=0.00934601
X=-0.0839844 Y=-0.0839844 Z=0.0265579
X=-0.12793 Y=-0.12793 Z=0.0317402
X=0.140625 Y=0.140625 Z=0.0395508
X=0.275391 Y=0.275391 Z=0.15168
X=-0.0927734 Y=-0.0927734 Z=0.234987
X=0.441406 Y=0.441406 Z=0.389679



Last iteration:

X=0 Y=0 Z=0

X=-0.0126953 Y=-0.0126953 Z=1.71661e-05

X=0.0283203 Y=0.0283203 Z=0.000617981

X=0.046484 Y=0.046484 Z=0.0429153

X=0.05332 Y=0.05332 Z=0.0470142

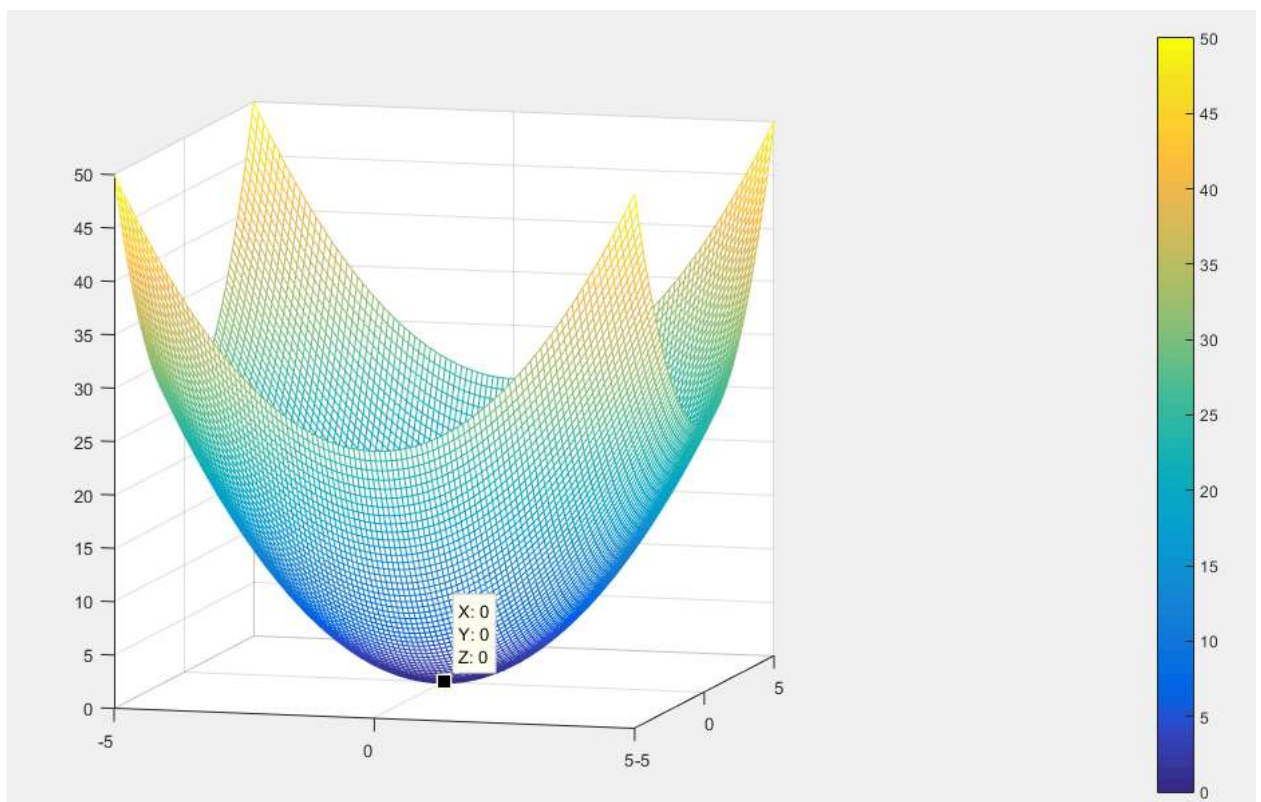
X=-0.042148 Y=-0.202148 Z=0.081728

X=0.060742 Y=0.060742 Z=0.070519

X=0.070117 Y=0.070117 Z=0.073973

X=0.074023 Y=0.074023 Z=0.079787

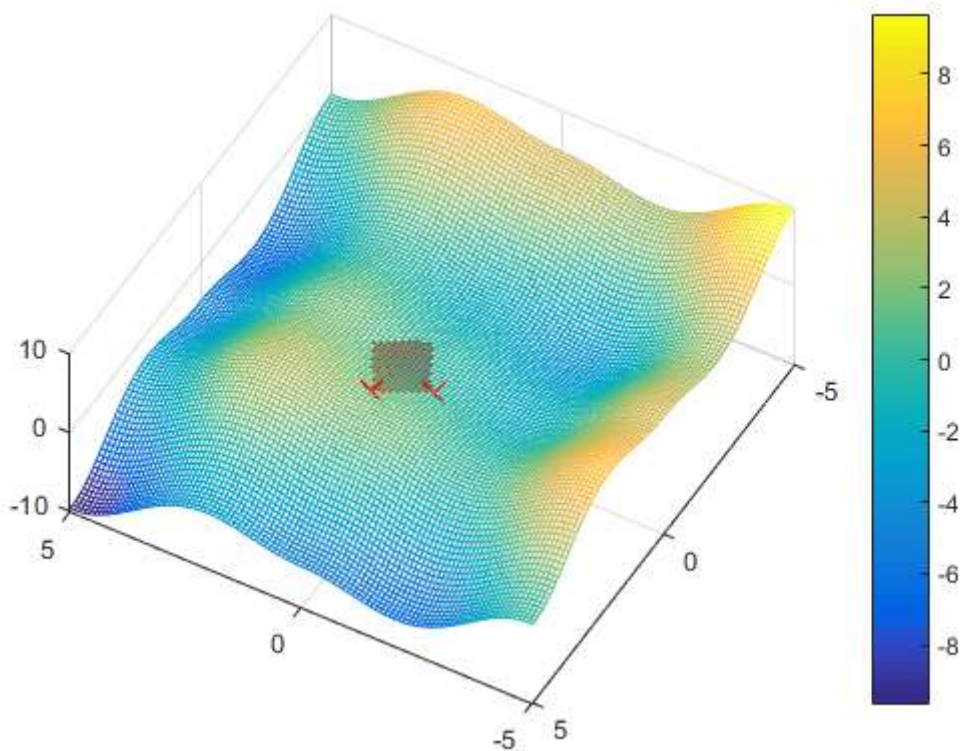
X=-0.059961 Y=-0.059961 Z=0.052364



Task two: find a minimum of the function $z(x,y) = x * \sin(|x|) + y * \sin(|y|)$

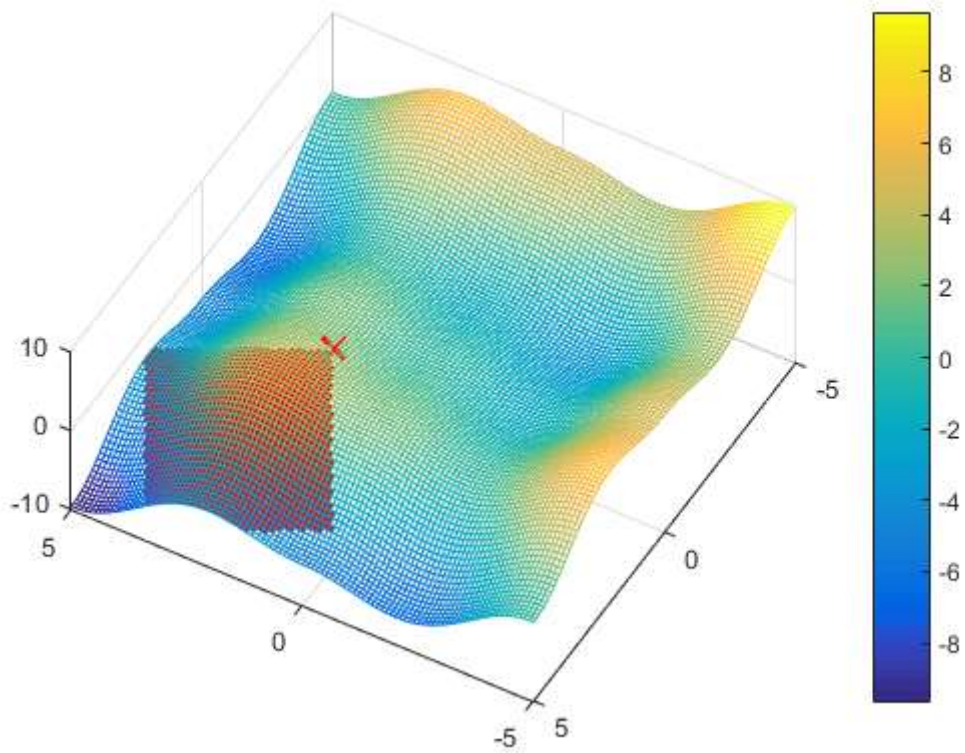
First iteration:

X=-0.0927734 Y=-0.0927734 Z=-0.230413
X=-0.12793 Y=-0.12793 Z=-0.0316563
X=-0.0839844 Y=-0.0839844 Z=-0.0264992
X=-0.318359 Y=-0.318359 Z=-0.00933873
X=-0.0400391 Y=-0.0400391 Z=-0.00352565
X=-0.0283203 Y=-0.0283203 Z=-0.00160387
X=-0.0380859 Y=-0.0380859 Z=-9.34594e-05
X=0.140625 Y=0.140625 Z=0.0394206
X=0.275391 Y=0.275391 Z=0.14977
X=0.441406 Y=0.441406 Z=0.377148



iteration in the middle:

X=4.679492 Y=3.979492 Z=-7.242407
X=4.006016 Y=4.116016 Z=-6.38624
X=3.6283203 Y=4.0283203 Z=-4.76835
X=4.213327 Y=1.111328 Z=-2.4247367
X=3.382813 Y=3.814015 Z=-2.285985
X=3.224609 Y=3.424609 Z=-1.114318
X=2.129883 Y=4.129883 Z=-1.0331417
X=2.6224609 Y=3.8224609 Z=-0.9810089
X=2.507031 Y=3.207031 Z=-0.8259118
X=0.492188 Y=0.492188 Z=0.465171



Last iteration:

X=5 Y=5 Z=-9.589195

X=4.879492 Y=4.979492 Z=-9.242407

X=4.406016 Y=4.616016 Z=-8.38624

X=4.5433203 Y=4.368203 Z=-8.37325

X=4.213327 Y=3.911328 Z=-6.4247367

X=4.285813 Y=3.696015 Z=-5.285985

X=3.224609 Y=3.424609 Z=-5.154318

X=3.143416 Y=3.116016 Z=-5.138624

X=3.6283203 Y=4.0283203 Z=-4.76835

X=4.213327 Y=1.111328 Z=-2.4247367

