Hufana, Phillip Ian John
Tampugao, Mohammad Muraya

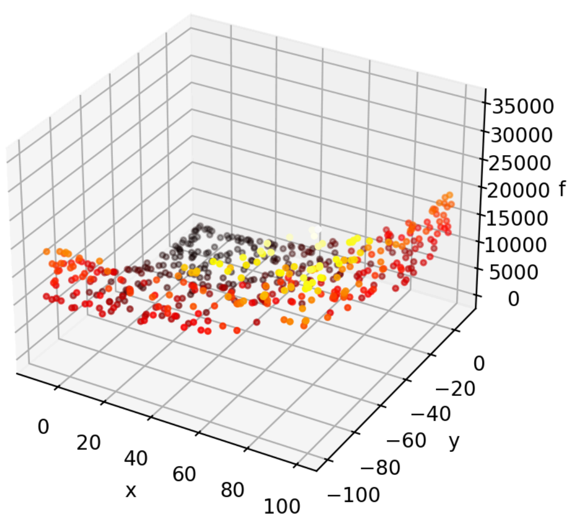
$$f(x,y) = \sin^2 3\pi x + (x-1)^2\left(1+\sin^2 3\pi y\right) + (y-1)^2\left(1+\sin^2 2\pi y\right)$$

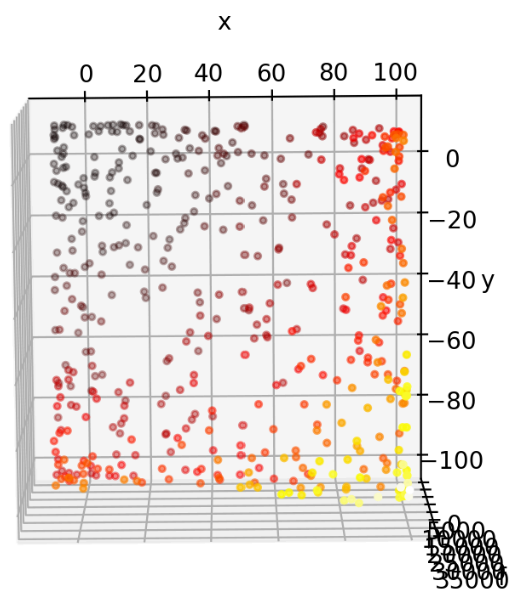
Optimal objective function value is 0.0.
The bounds of x and y are below. You may set to whatever large value in place for +infinity while any small negative value for -infinity.

$$x \in [-10.0, +\infty]$$
$$y \in [-\infty, 10]$$

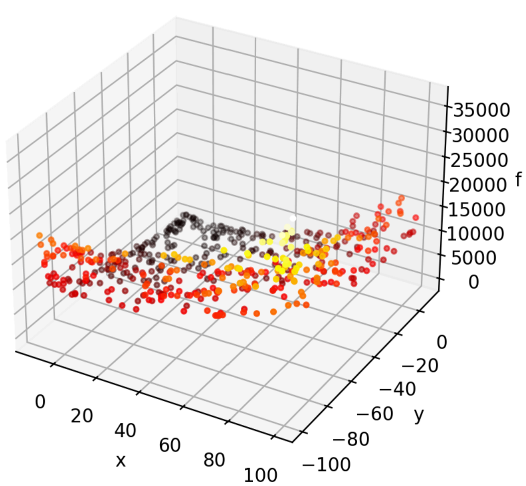
At 500 population:

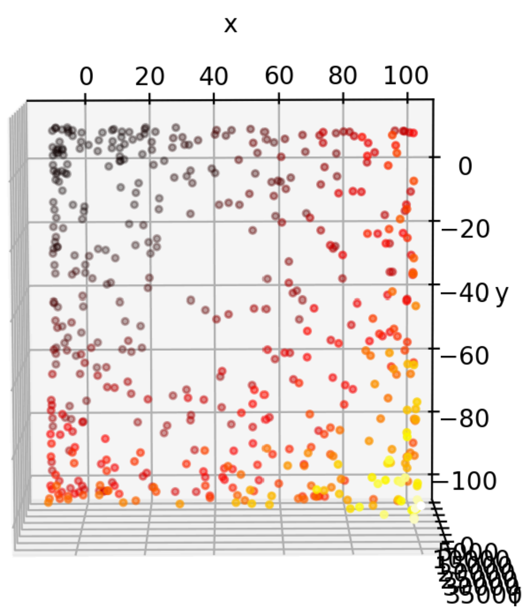
Chaotic_Logistic:





Chaotic_Sinusoidal:





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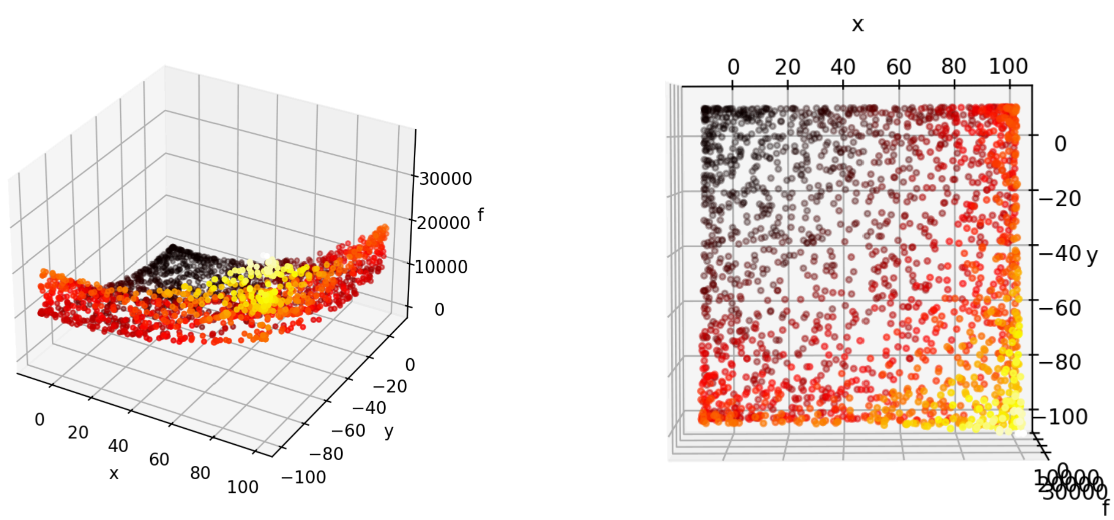
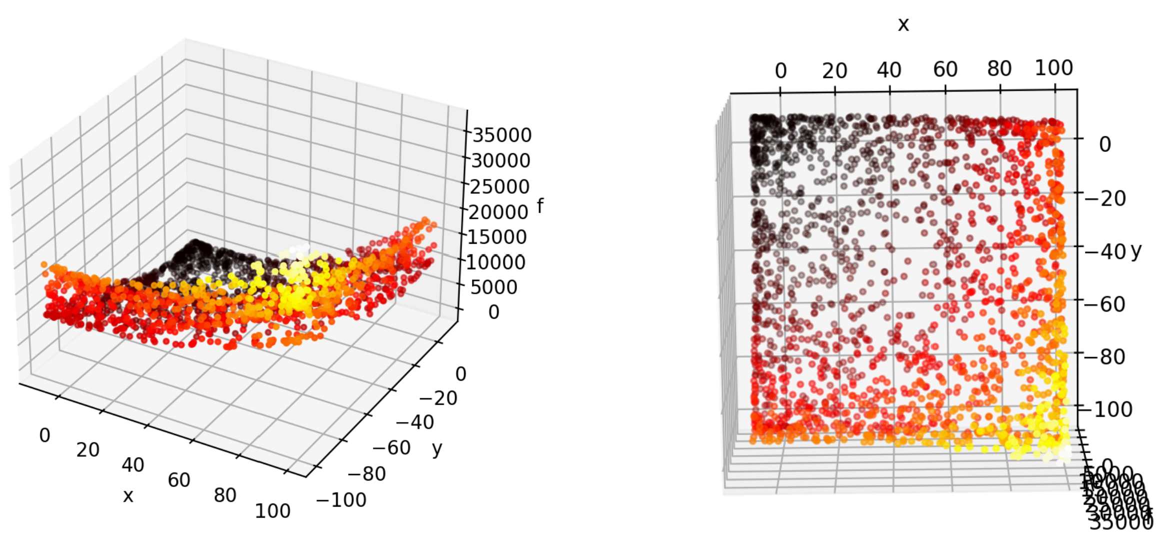
The chaotic logistic and chaotic sinusoidal at Population 500 have similarities and differences. At an initial population with 500 solutions, one can already tell that the logistic is more evenly spread than the sinusoidal. The chaotic map of sinusoidal has an apparent hole in the middle and is more clumped on the corners of the map. Subsequently, the logistic chaotic map is more evenly spread. Since the sinusoidal clumps more often on the corners than the logistic, the overall data points (generated solutions) of the sinusoidal are closer to the optimal objective function value of 0.0.

At 2000 Population:

Chaotic_logistic



Chaotic_Sinusoidal:



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- At a population of 2000, the chaotic map is much clearer than at 500. It is clearly illustrated in the population of 2000 that our impression about the population of 500 is correct. It is still apparent that the chaotic map of logistic is much more evenly spread than the sinusoidal that is prone to clamping and has a hole in the center. In this regard, we can say that the logistic chaotic map is much more precise than the sinusoidal. However, the clumping of the sinusoidal is much more evident on the corners where the optimal objective function value of 0.0 is located. Thus, sinusoidal is much more accurate in reference to 0 than logistic chaotic map.