SOFT COMPUTING

PARTICLE SWARM OPTIMIZATION

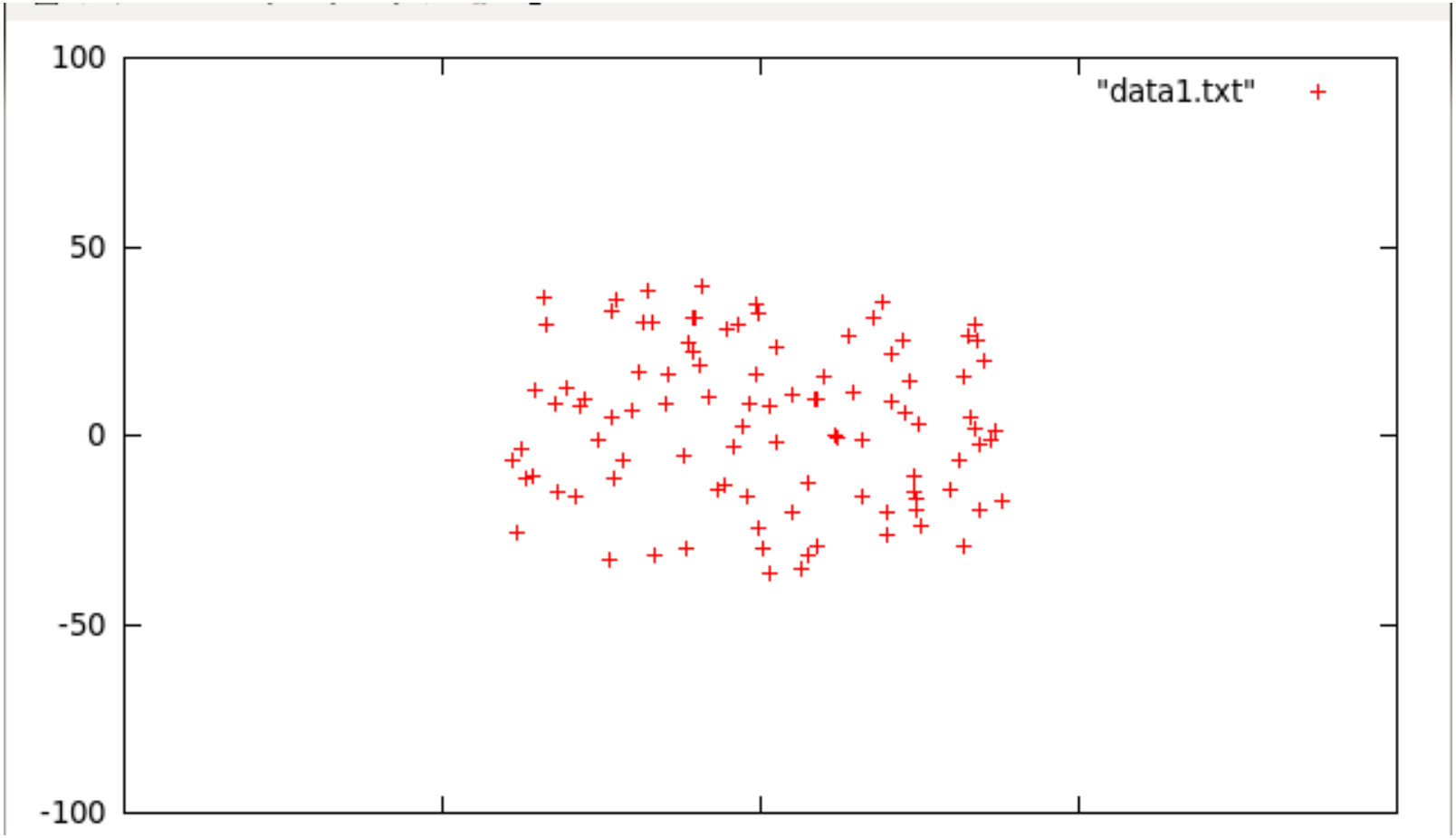
SPHERE FUNCTION
&
RASTRIGIN FUNCTION

M10159011 杜雪吟

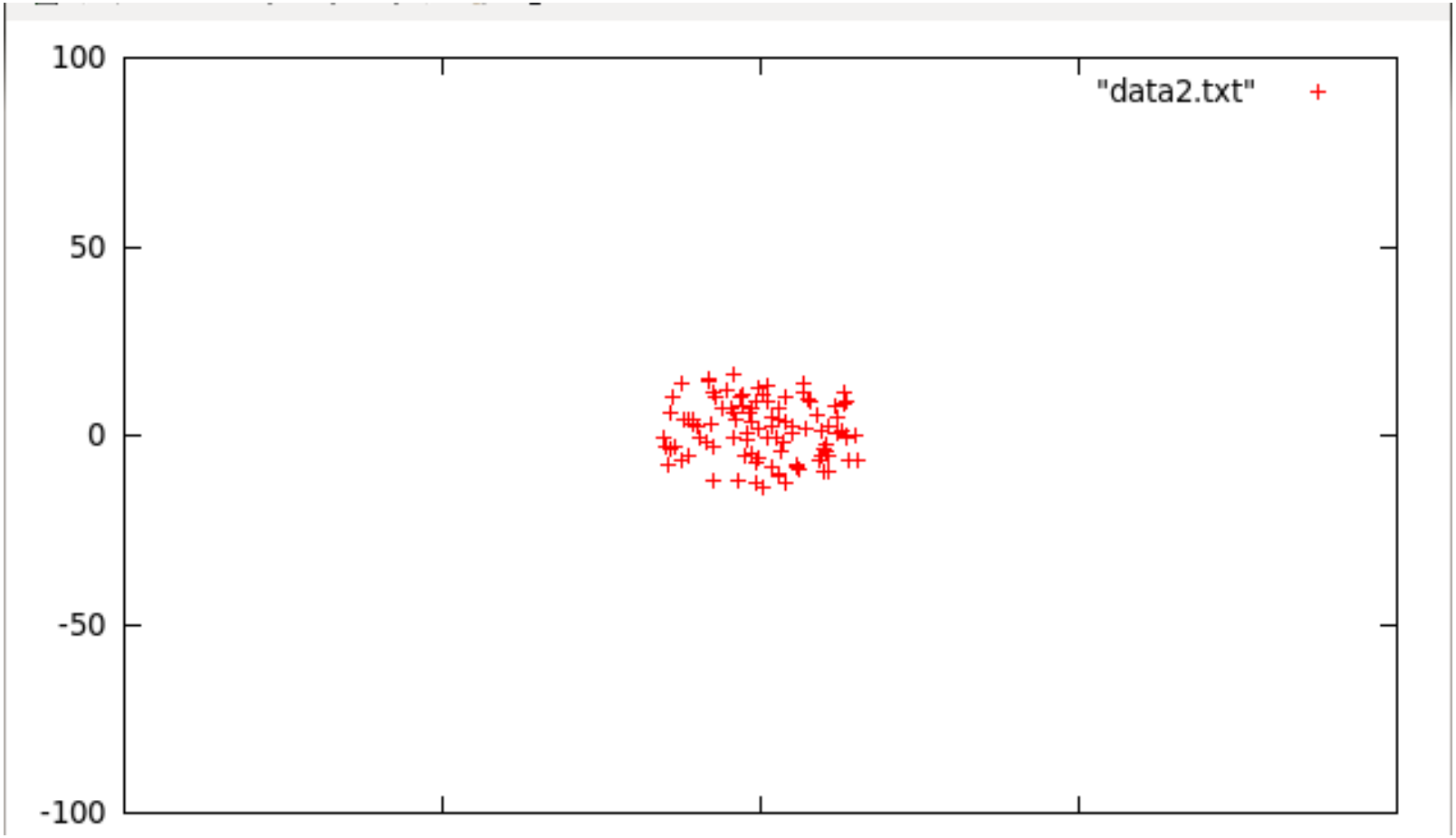
SPHERE FUNCTION - PARAMETERS

- Particle number: 100
- Search domain: $-100 < X_i < 100$
- C_1: 2
- C_2: 2
- $Rand_1$: 0.26159124447458926
- $Rand_2$: 0.056226893824293245
- V_0: [0, 0]
- W: 0
- Terminate condition: t = 100

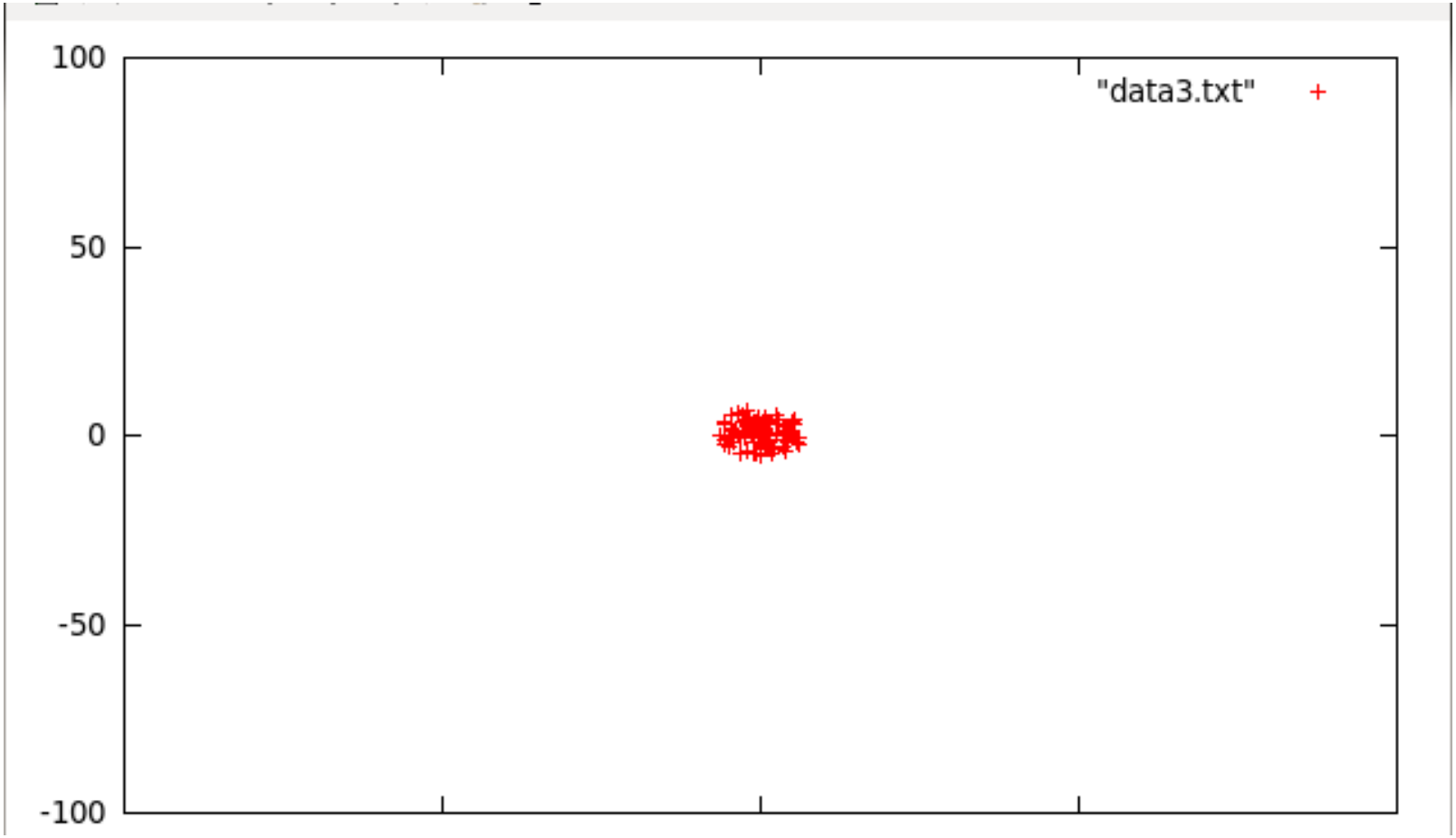
SPHERE FUNCTION - PROCESS (1/7)



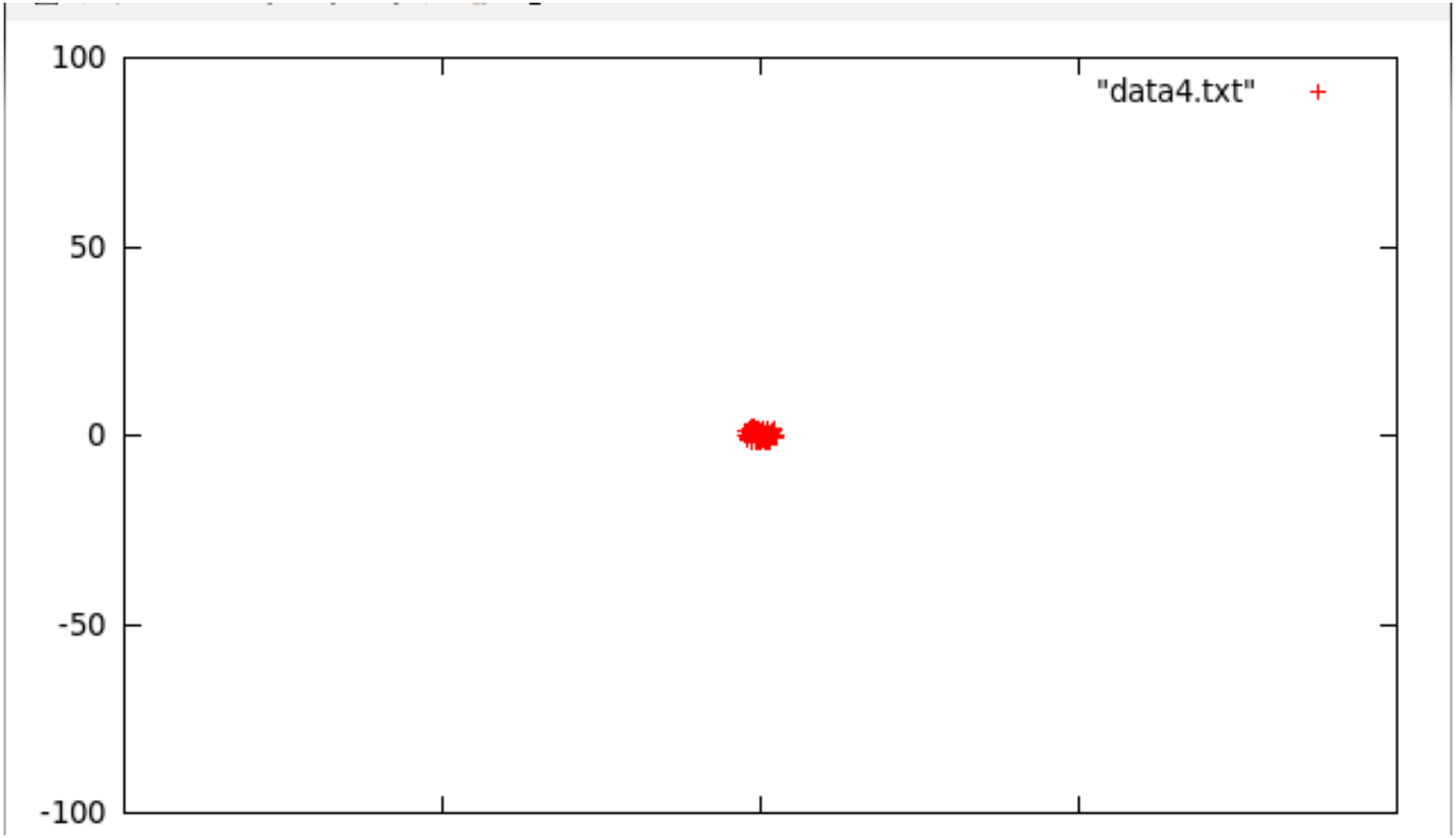
SPHERE FUNCTION - PROCESS (2/7)



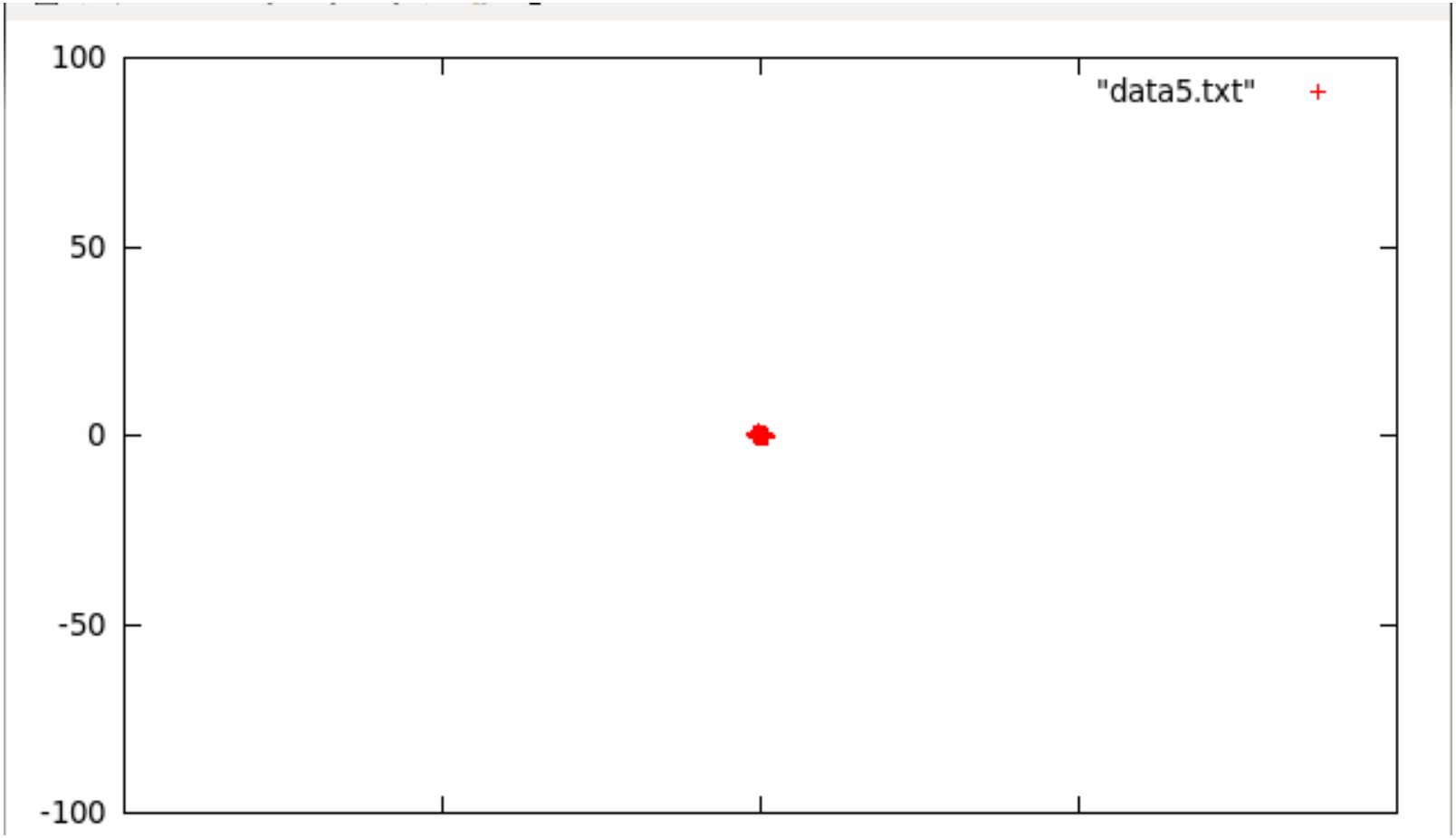
SPHERE FUNCTION - PROCESS (3/7)



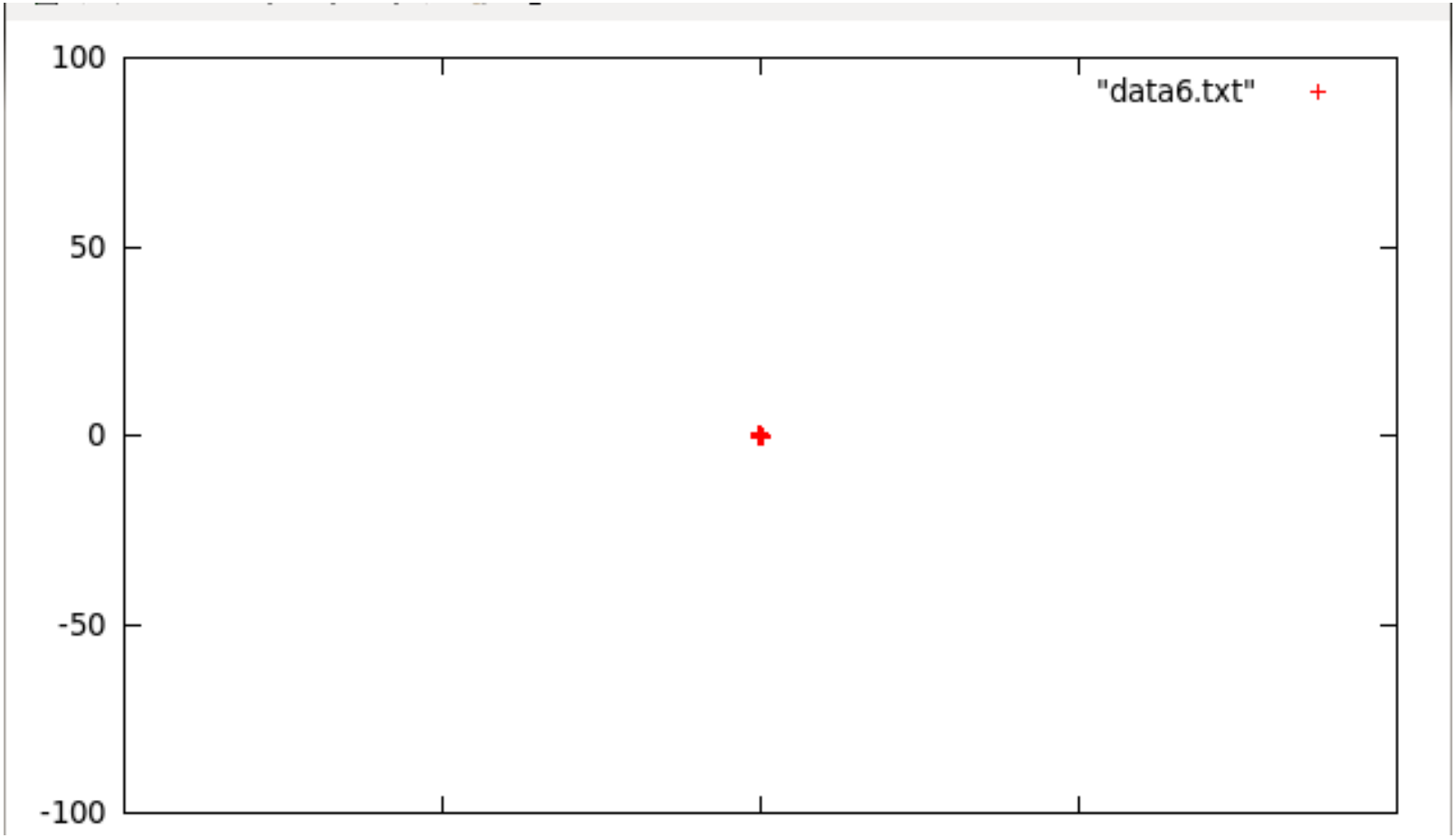
SPHERE FUNCTION - PROCESS (4/7)



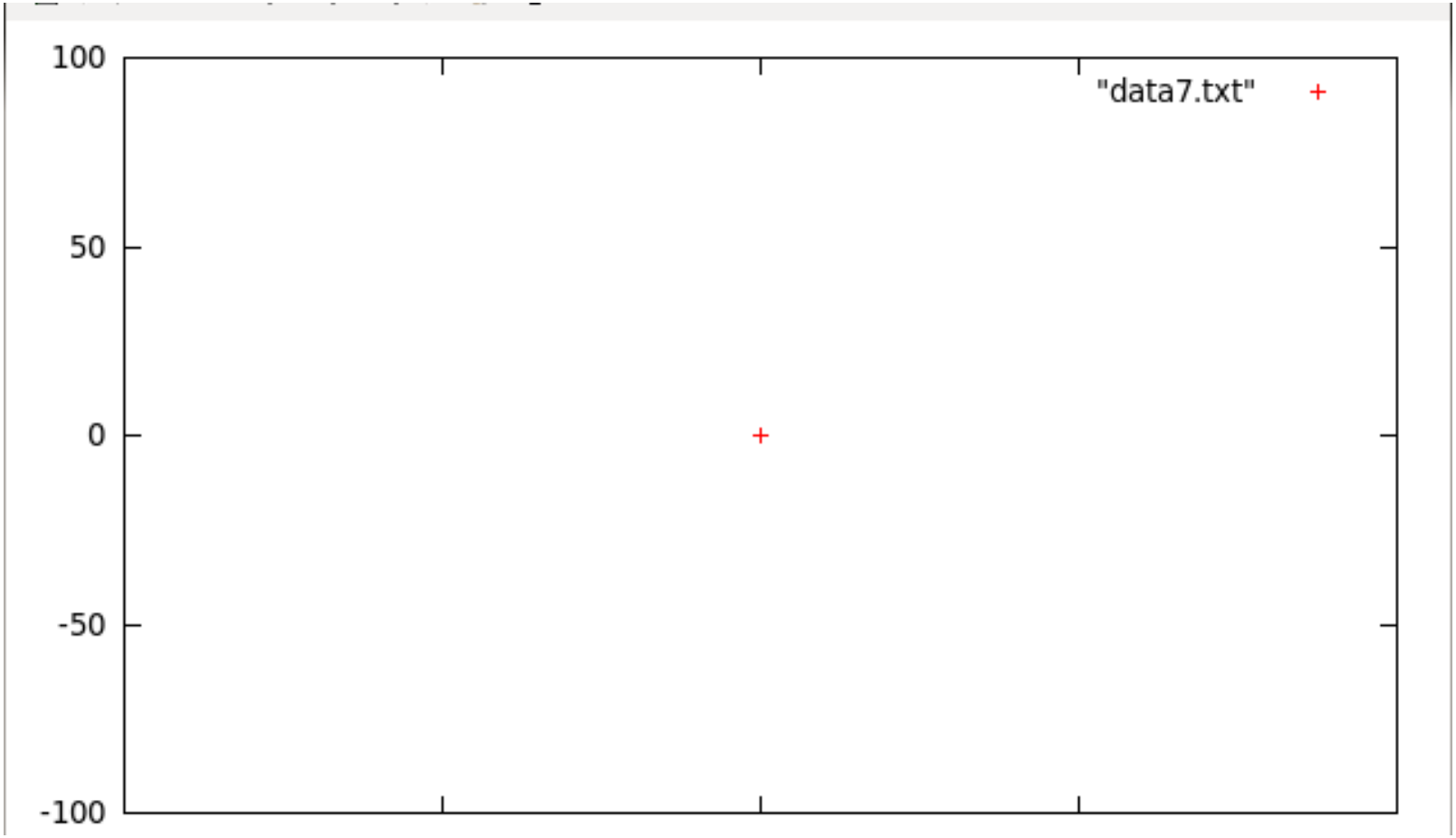
SPHERE FUNCTION - PROCESS (5/7)



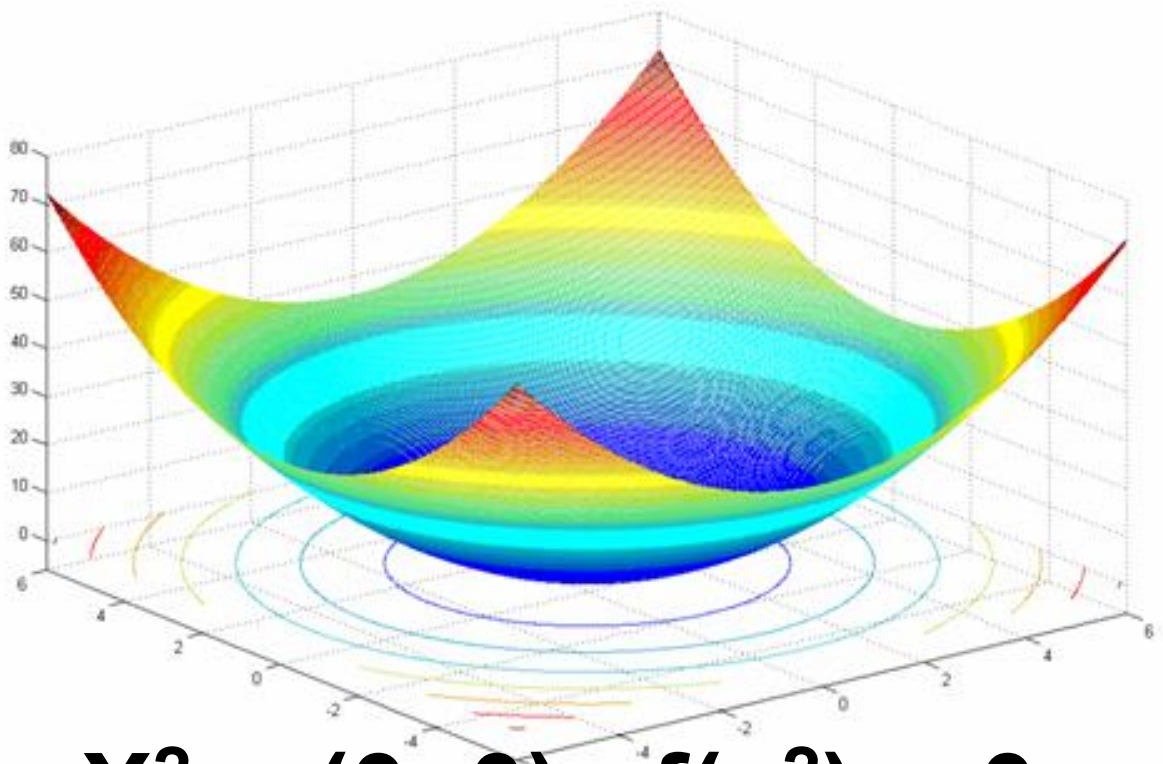
SPHERE FUNCTION - PROCESS (6/7)



SPHERE FUNCTION - PROCESS (7/7)



SPHERE FUNCTION - THE GLOBAL MINIMA

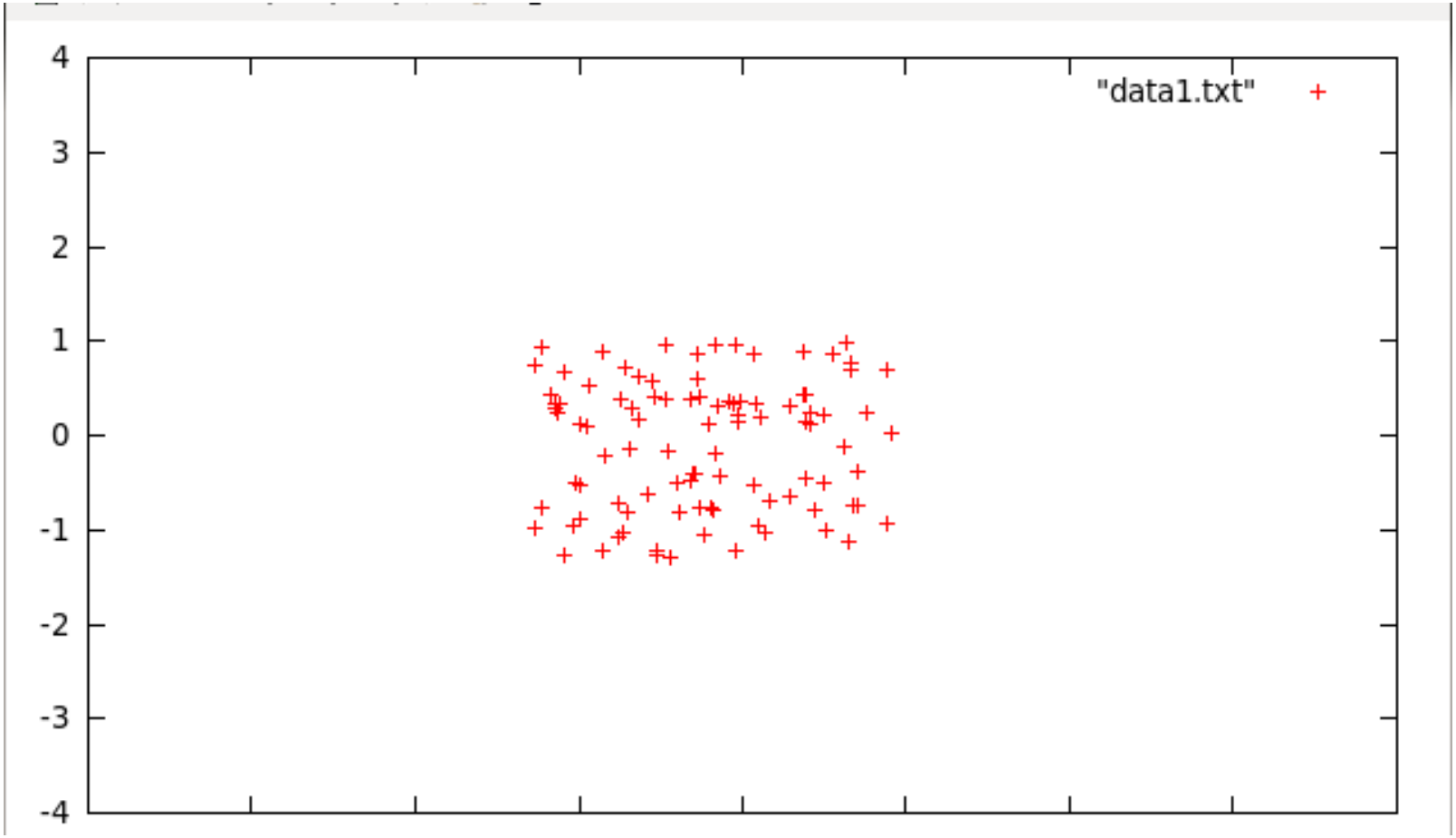


$X^2 = (0, 0)$, $f(x^2) = 0$

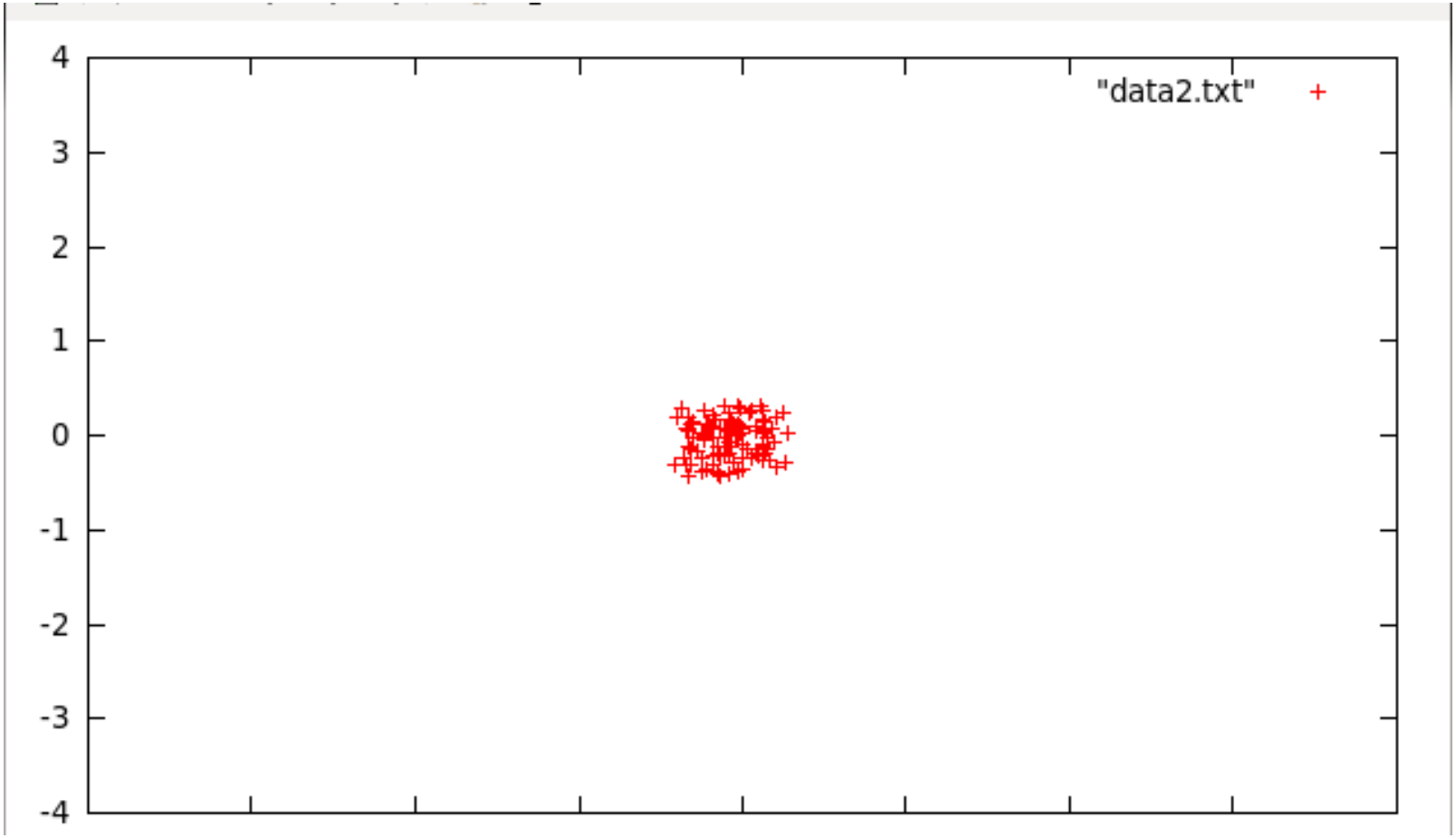
RASTRIGIN FUNCTION - PARAMETERS

- Particle number: 100
- Search domain: $-4 < X_i < 4$
- C_1: 2
- C_2: 2
- $Rand_1$: 0.28019110555769167
- $Rand_2$: 0.081576937926788
- V_0: [0, 0]
- W: 0
- Terminate condition: t = 100

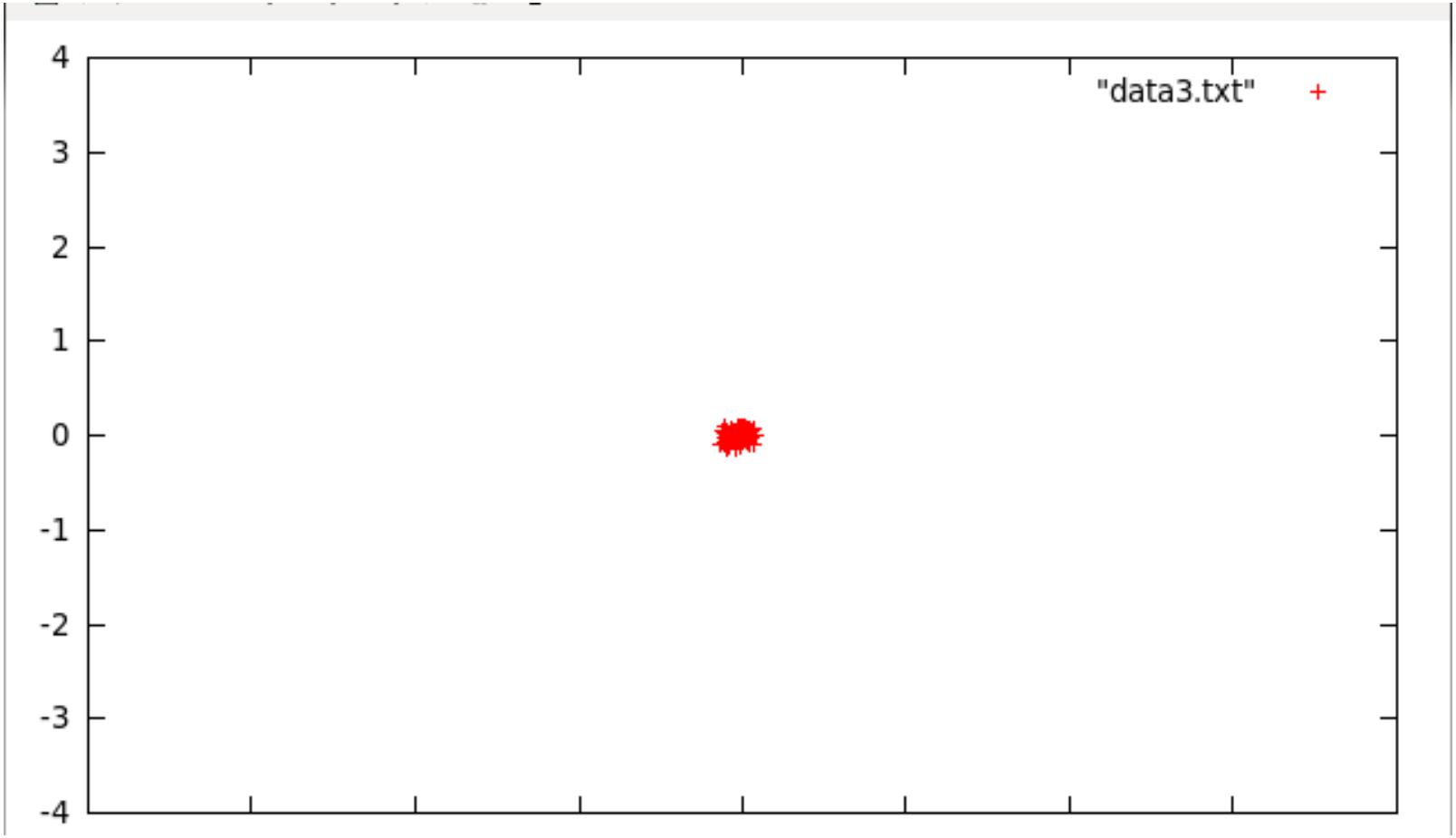
RASTRIGIN FUNCTION - PROCESS (1/7)



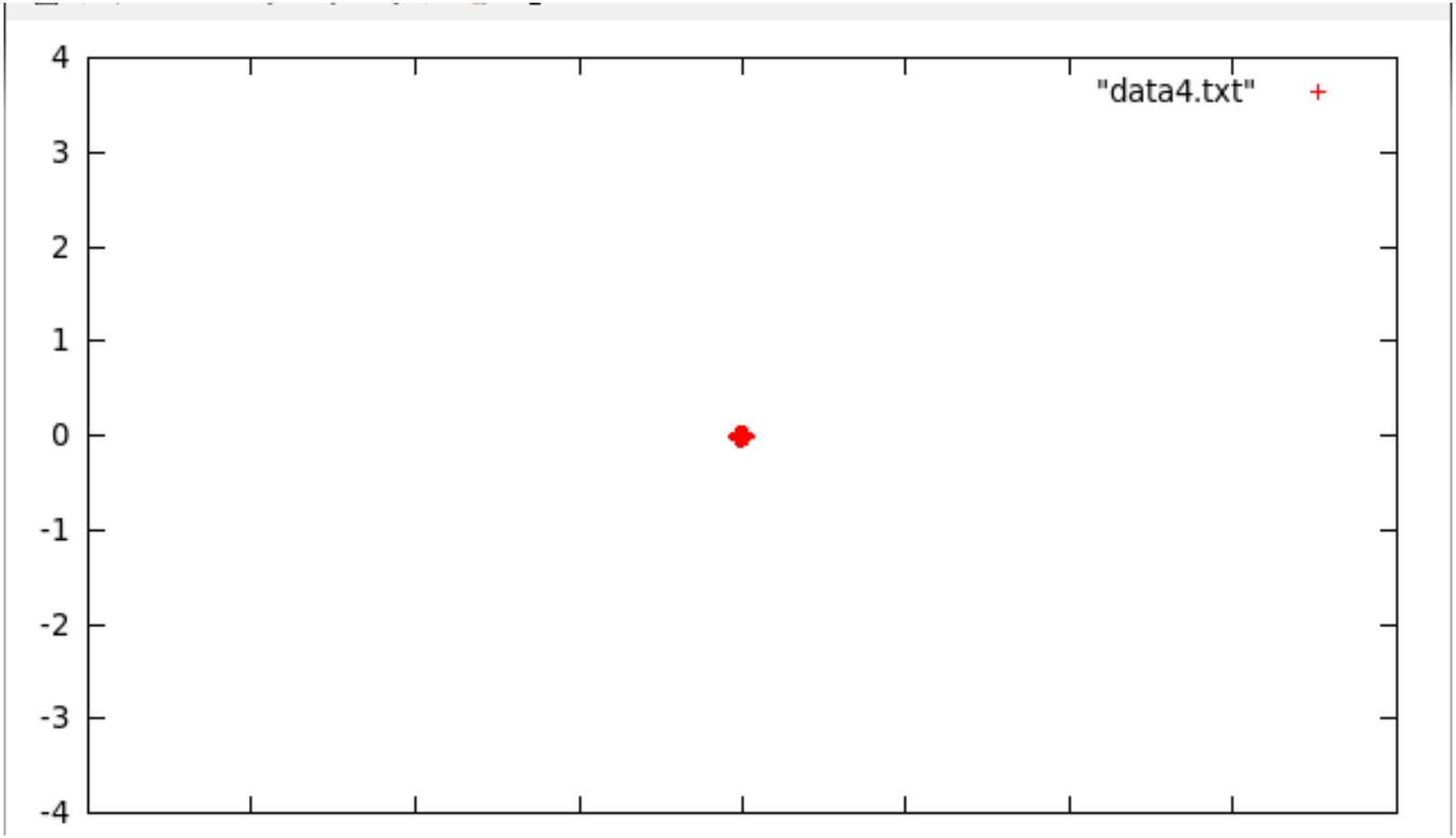
RASTRIGIN FUNCTION - PROCESS (2/7)



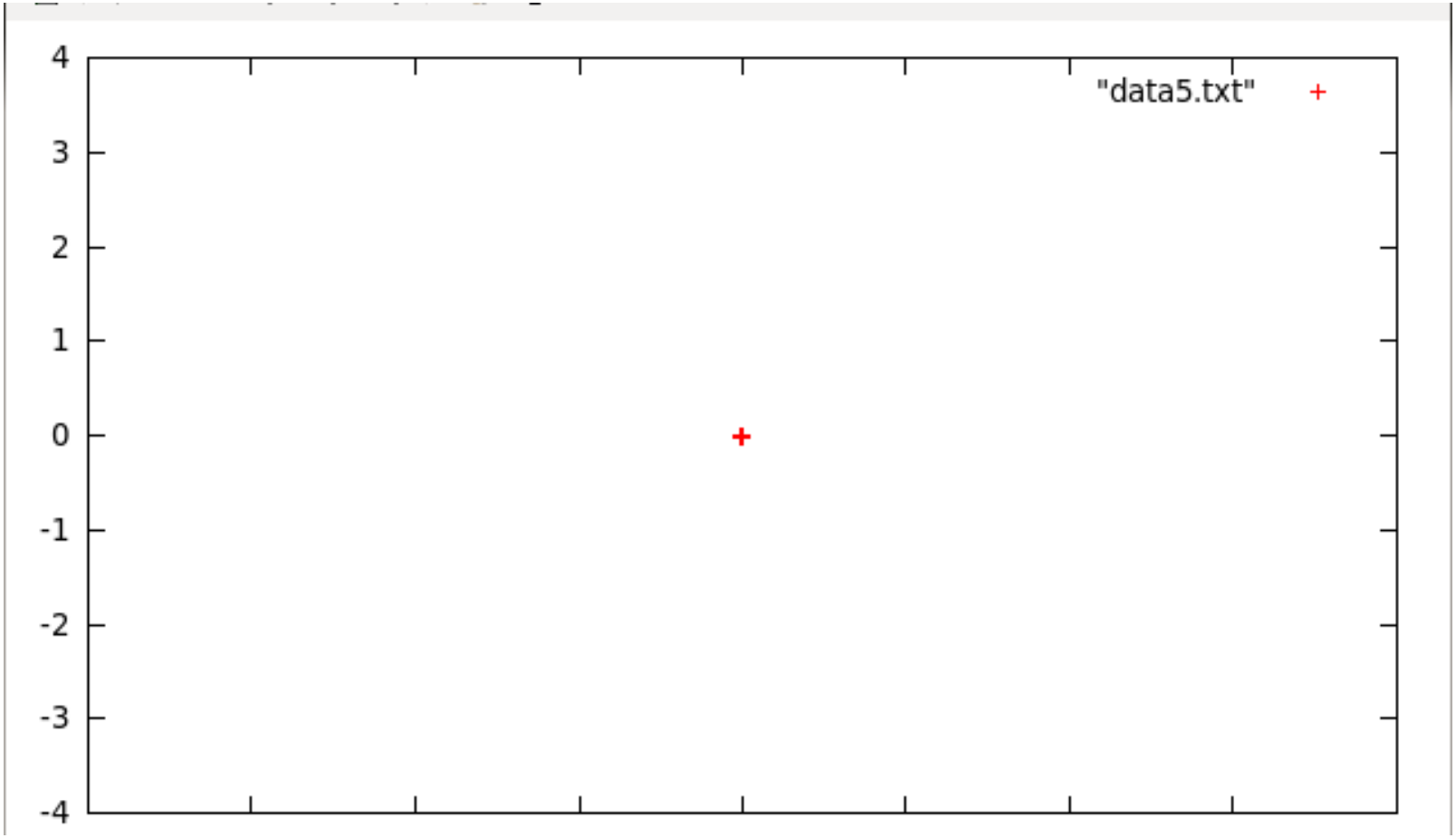
RASTRIGIN FUNCTION - PROCESS (3/7)



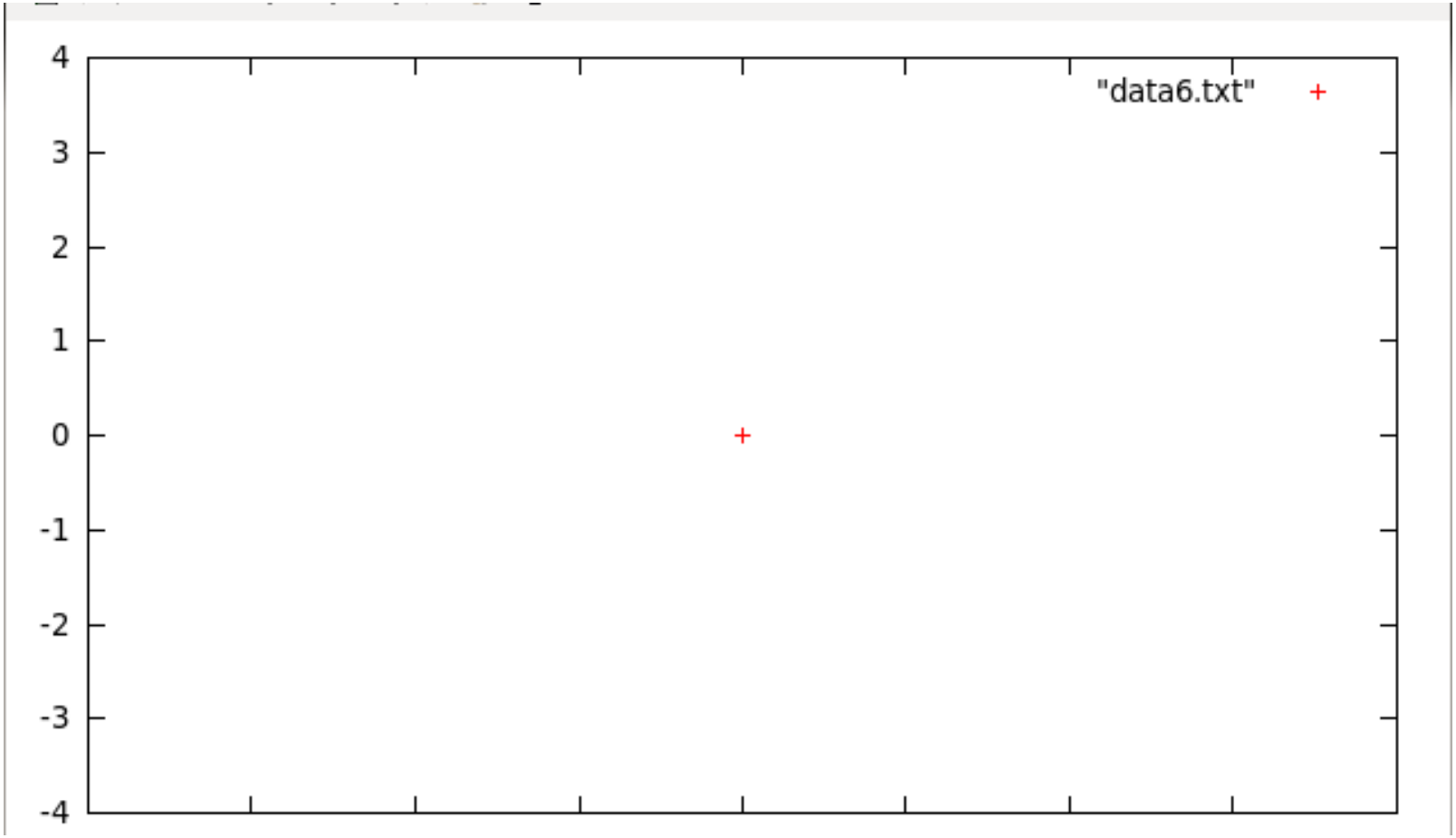
RASTRIGIN FUNCTION - PROCESS (4/7)



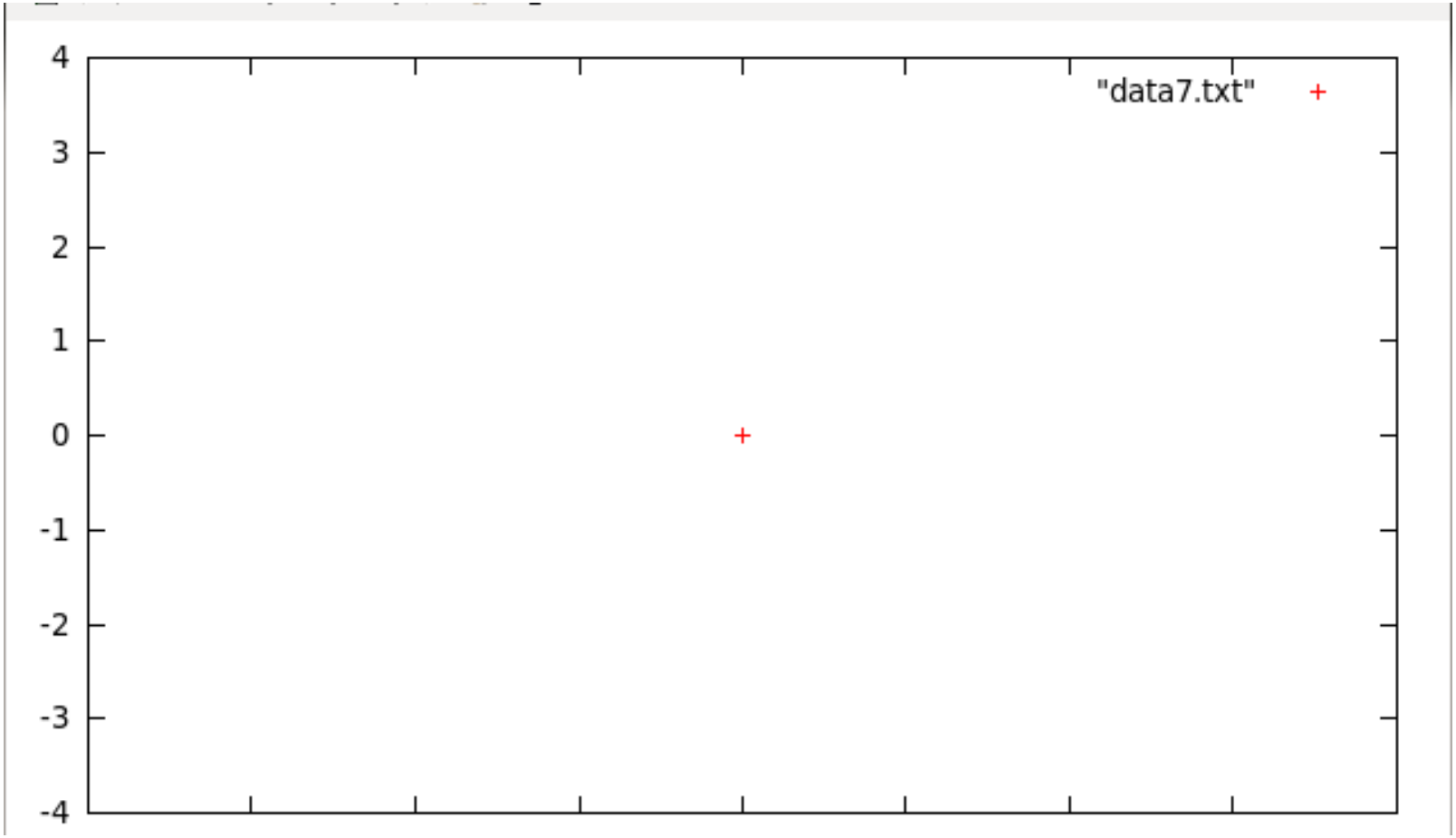
RASTRIGIN FUNCTION - PROCESS (5/7)



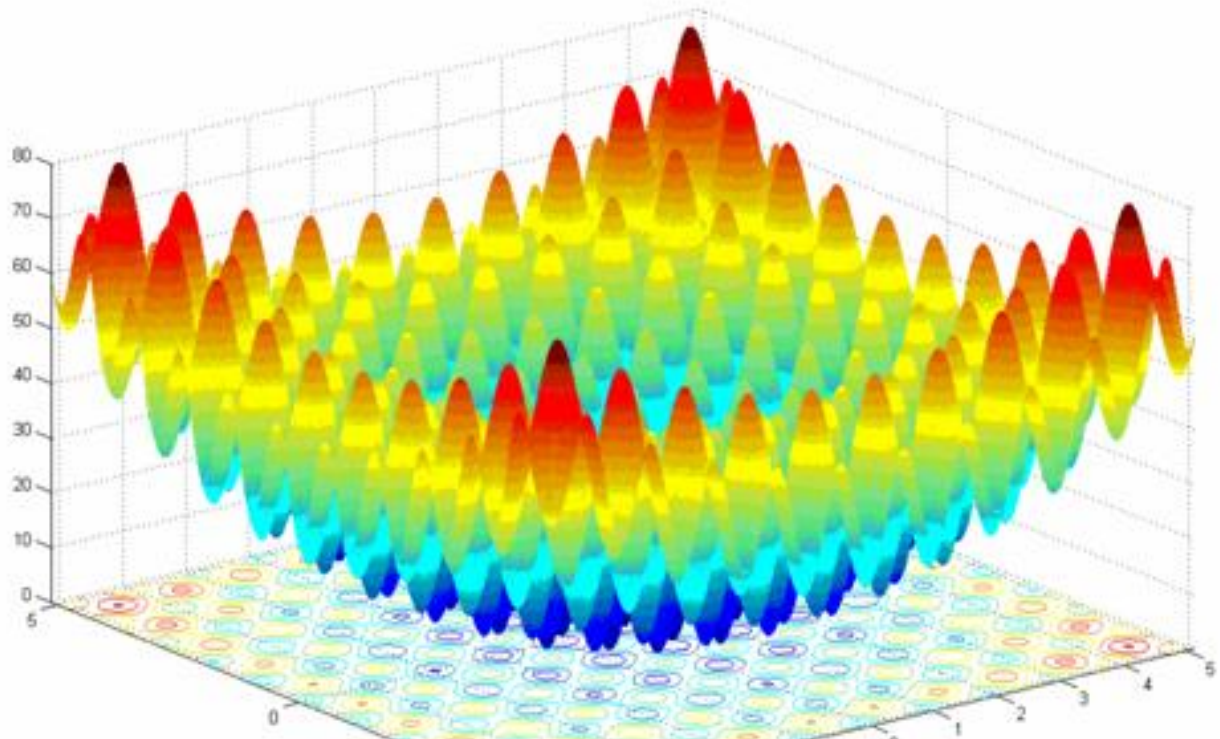
RASTRIGIN FUNCTION - PROCESS (6/7)



RASTRIGIN FUNCTION - PROCESS (7/7)



RASTRIGIN FUNCTION - THE GLOBAL MINIMA



$X^2 = (0, 0)$, $f(x^2) = 0$

THANK YOU!

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