

	x_1	x_2	Fitness Evaluation	Calculation Note / Comment
Starting Solution, S_0	2	2	0.2432	$=x_1 * \cos(x_1) * \sin(x_2) + 0.5 * x_2$

	x_1	x_2	Fitness Evaluation	
Current Solution	2	2	0.2432	$=x_1 * \cos(x_1) * \sin(x_2) + 0.5 * x_2$
Done?	FALSE			

Iteration 1				
Best Neighbor (current)	2	2	0.2432	current solution from past iteration

Neighbors of (2, 2)	x_1	x_2	Fitness Evaluation	
Neighbor 1 ($x_1 + 1, x_2$)	3	2	-1.7006	$=x_1 * \cos(x_1) * \sin(x_2) + 0.5 * x_2$
Neighbor 2 ($x_1 - 1, x_2$)	1	2	1.4913	...
Neighbor 3 ($x_1, x_2 + 1$)	2	3	1.3825	...
Neighbor 4 ($x_1, x_2 - 1$)	2	1	-0.2004	...

(New) Best Neighbor	3	2	-1.7006	$=\min(\text{neighbors}, \text{best_neighbor})$
is Best Neighbor Same as Old?	FALSE			
Done?	FALSE			done if same

	x_1	x_2	Fitness Evaluation	
Current Solution	3	2	-1.7006	$=x_1 * \cos(x_1) * \sin(x_2) + 0.5 * x_2$

Iteration 2				
Best Neighbor (current)	3	2	(1.7006)	current solution from past iteration

Neighbors of (3, 2)	x_1	x_2	Fitness Evaluation	
Neighbor 1 ($x_1 + 1, x_2$)	4	2	-1.3774	$=x_1 * \cos(x_1) * \sin(x_2) + 0.5 * x_2$
Neighbor 2 ($x_1 - 1, x_2$)	2	2	0.2432	...
Neighbor 3 ($x_1, x_2 + 1$)	3	3	1.0809	...
Neighbor 4 ($x_1, x_2 - 1$)	3	1	-1.9991	...

(New) Best Neighbor	3	1	-1.9991	$=\min(\text{neighbors}, \text{best_neighbor})$
is Best Neighbor Same as Old?	FALSE			
Done?	FALSE			done if same

	x_1	x_2	Fitness Evaluation	
Current Solution	3	1	-1.9991	$=x_1 * \cos(x_1) * \sin(x_2) + 0.5 * x_2$

Iteration 3				
Best Neighbor (current)	3	1	(1.9991)	current solution from past iteration

Neighbors of (3, 1)	x_1	x_2	Fitness Evaluation	
Neighbor 1 ($x_1 + 1, x_2$)	4	1	-1.7001	$=x_1 * \cos(x_1) * \sin(x_2) + 0.5 * x_2$
Neighbor 2 ($x_1 - 1, x_2$)	2	1	-0.2004	...
Neighbor 3 ($x_1, x_2 + 1$)	3	2	-1.7006	...
Neighbor 4 ($x_1, x_2 - 1$)	3	0	0.0000	...

(New) Best Neighbor	4	1	-1.9991	$=\min(\text{neighbors}, \text{best_neighbor})$
is Best Neighbor Same as Old?	TRUE			
Done?	TRUE			done if same: end if end while