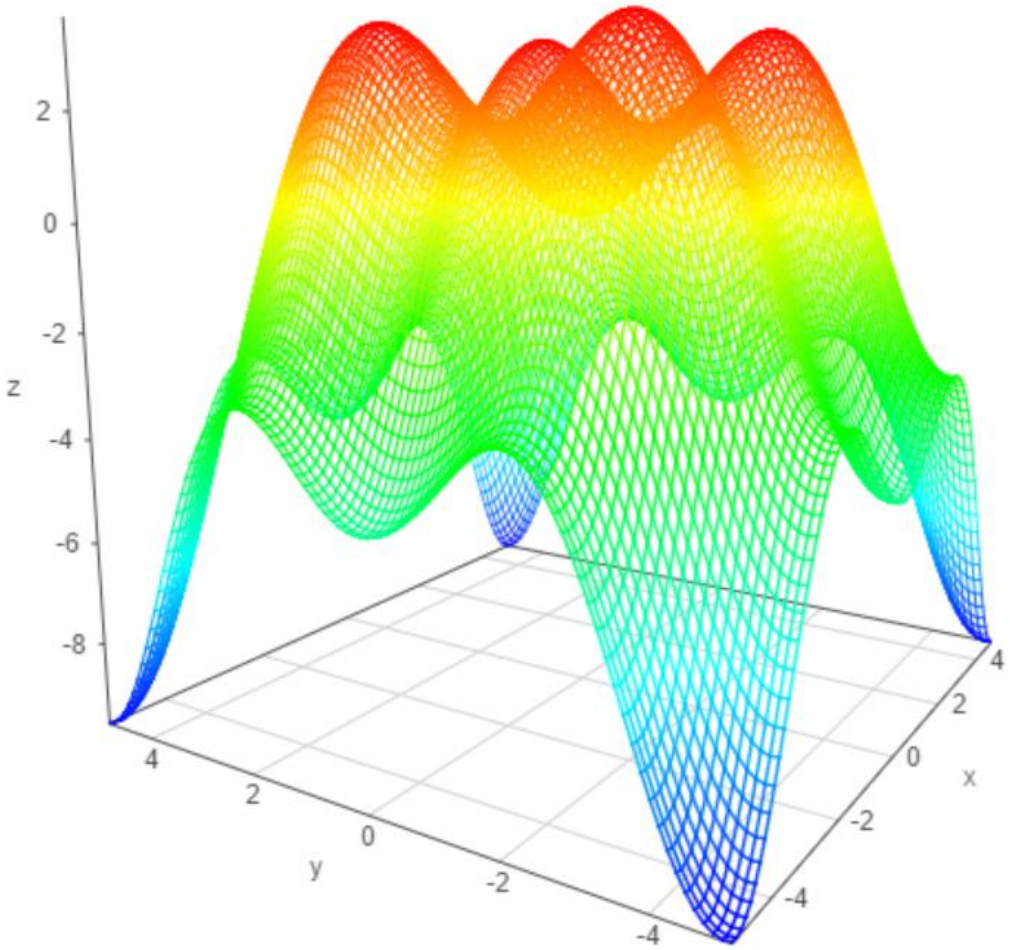
Source code on JS:

```
var population = [];
		var sigma = 3;

		function randomInit(){
			return Math.random() > 0.5 ? 1 : 0;
		}

		function sort(population){
			return population.sort(function(first, second){
				return (first.fitness < second.fitness) - (first.fitness < second.fitness);
			});
		}

		function init(){
			var chromosome = [];

			for(var i = 0; i < 22; i++){
				chromosome.push(randomInit());
			}

			return chromosome;
		}

		function getX(chromosome){
			var x = 0;

			for(var i = 1; i < 11; i++){
				x += chromosome[i] ? Math.pow(2, i - 1) / 1023 * 5 : 0;
			}
```

```
        return x;
}

function getY(chromosome){
        var y = 0;

        for(var i = 11; i < 22; i++){
                y += chromosome[i] ? Math.pow(2, i - 11) / 1023 * 5: 0;
        }

        return y;
}

function getS(d){
        return d < sigma ? 1 - d / sigma : 0;
}

function fitness(chromosome){
        var x = getX(chromosome);
        var y = getY(chromosome);

        x *= chromosome[0] ? 1 : -1;
        y *= chromosome[11] ? 1 : -1;

        return x * Math.sin(x) + y * Math.sin(y);
}

function getSharedFitness(){
        /*
        var result = 0;

        for(var i = 0; i < 20; i++){
```

```
                var x = getX();
                var y = getY();

                //...
            }

            return population;
            */
        }

        function uniformCrossover(firstChromosome, secondChromosome){ //V
            var returnChromosomes = [];
            var returnChromosome1 = [];
            var returnChromosome2 = [];

            for(var i = 0; i < 22; i++){
                Math.random() > 0.5 ? returnChromosome1.push(firstChromosome[i]) :
                returnChromosome1.push(secondChromosome[i]);
                Math.random() > 0.5 ?
returnChromosome2.push(secondChromosome[i]) :
                returnChromosome2.push(firstChromosome[i]);
            }

            returnChromosomes.push(returnChromosome1);
            returnChromosomes.push(returnChromosome2);

            return returnChromosomes;
        }
        function mainCycle(){
            //...
        }
```


z
2
0
-2
-4
-6
-8
y
4
2
0
-2
-4
x
4
2
0
-2
-4