

Write a program to solve the SHE equations of a 2-level inverter using Newton- Raphson Method.

```
import numpy as np
from scipy.optimize import minimize
def objective(alfa, N, m):
    return np.abs(np.sin(alfa) - np.sin((2*m-1)*np.pi/(2*N)))
def solve_she_equations(initial_guess, N, m, max_iter):
    result = minimize(objective, initial_guess, args=(N, m),
    bounds=[(0, 2*np.pi)], options={'maxiter': max_iter})
    if result.success:
        return result.x[0]
    else:
        return None
# User inputs
initial_guess = float(input("Enter initial guess (in radians):
"))
N = int(input("Enter total number of harmonics (N): "))
m = int(input("Enter number of desired harmonics to eliminate
(m): "))
max_iter = int(input("Enter maximum number of iterations: "))
result = solve_she_equations(initial_guess, N, m, max_iter)
if result is not None:
    print("The firing angle (in radians) to eliminate {m}
harmonics out of {N} is: {result:.6f}")
else:
    print("Failed to converge to a solution within the specified
iterations.")
```