ME543
Project Report
On
2D Heat conduction

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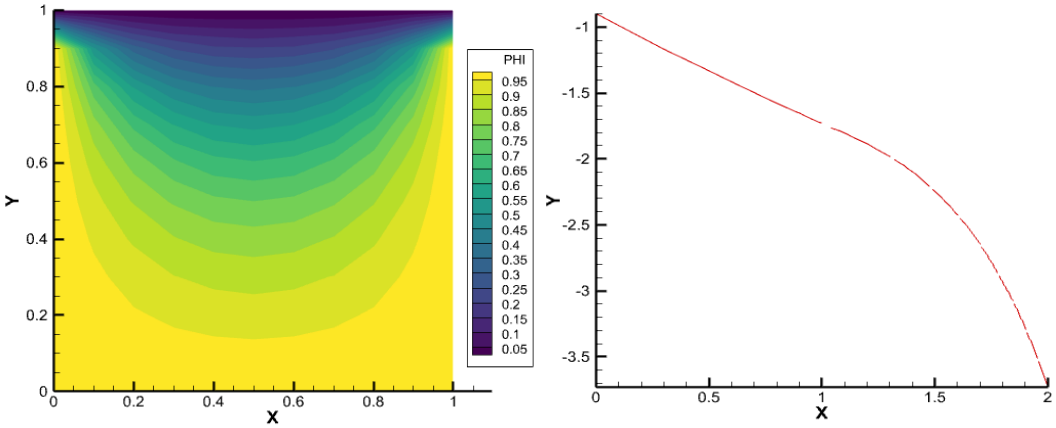
Problem

grid size dx=dy=0.1

1. **Jacobi iterative method**



log iteration VS log error plot

X-Axis= log(iteration)

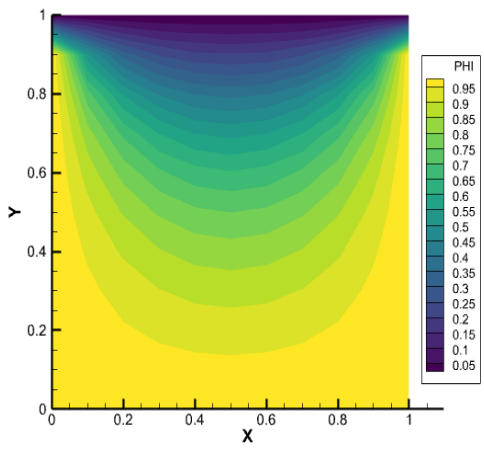
Y-Axis=log(error)

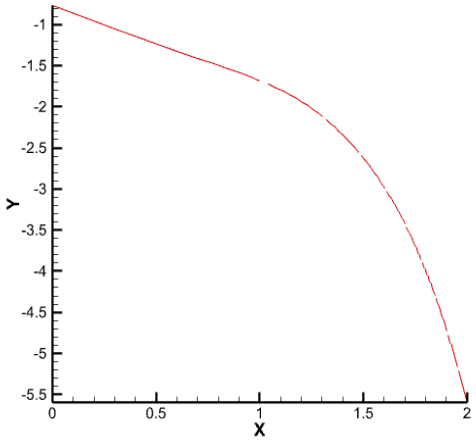
For error =1e-8

Number of iterations are **134**

Txt file of iteration vs error is attached with the code.

2. **Point Gauss-Seidel iterative method**





Log iteration VS log error plot

X-Axis= log(iteration)

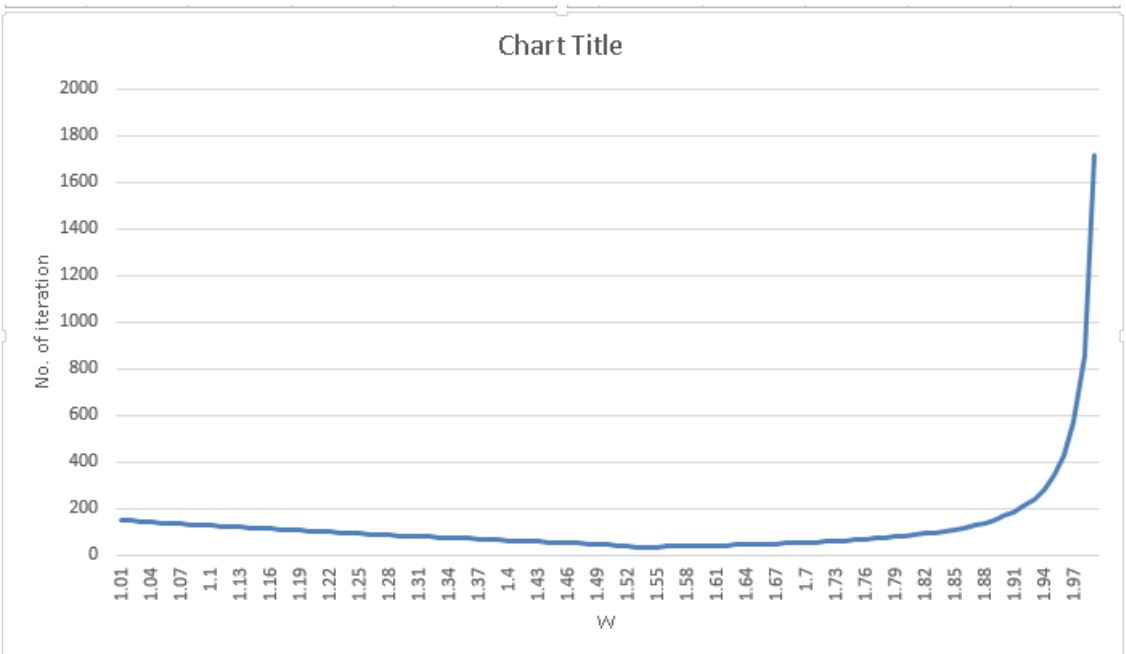
Y-Axis=log(error)

For error =1e-8

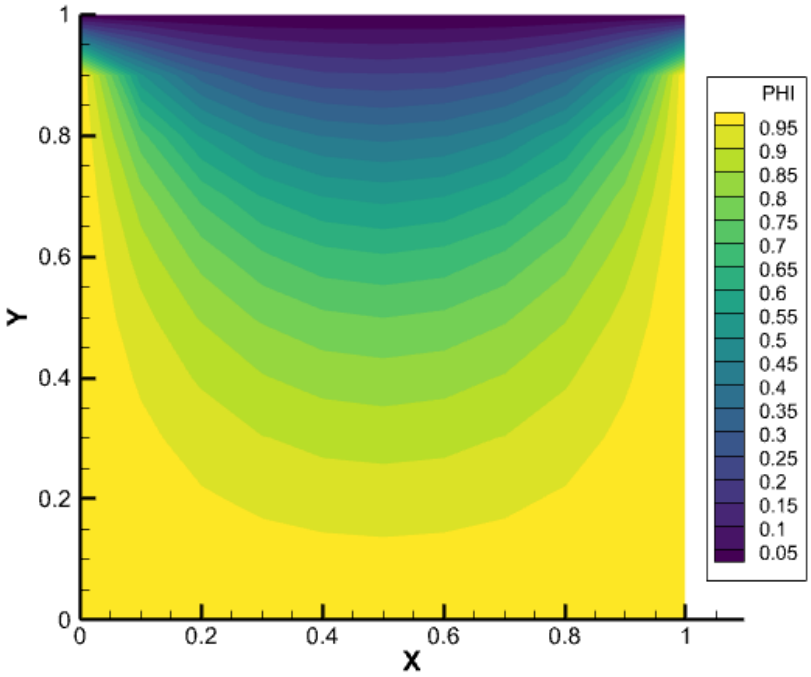
Number of iterations are **156**

Txt file of iteration vs error is attached with the code.

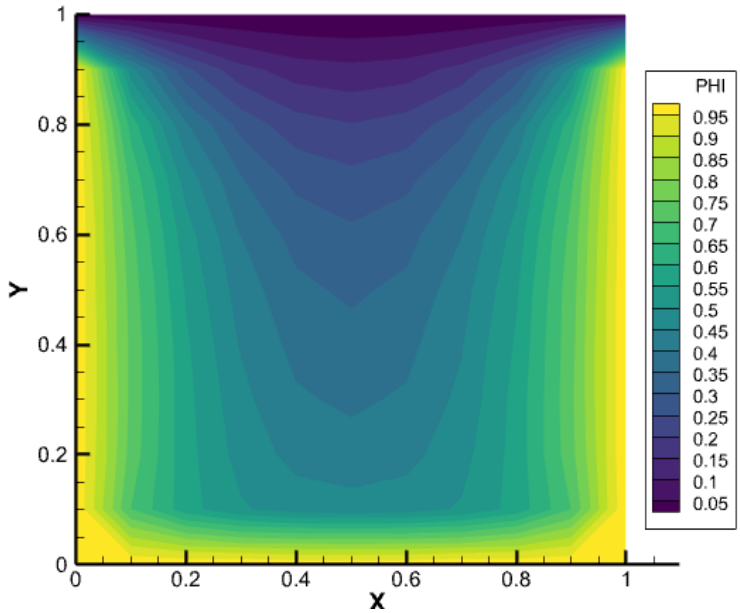
3. **Point Successive Over Relaxation (PSOR) method**



W optimum is **1.54** no. of iteration **34**

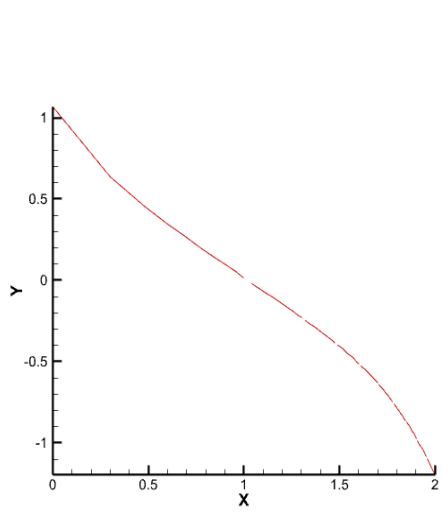


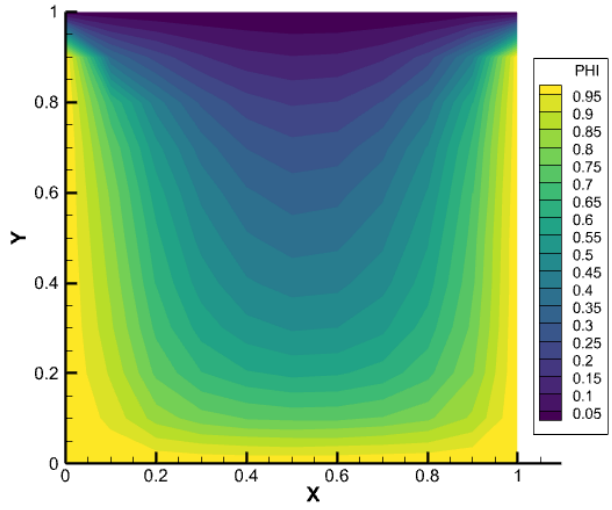
4. **Line Gauss-Seidel iterative method (Tridiagonal Matrix Algorithm)**



No. of iteration **56**

5. **Alternating Direction Implicit method (ADI)**





No. of iteration = **24**

Log iteration VS log error plot

X-Axis= log(iteration) Y-Axis=log(error) For error =1e-8