Final Project

Numerical Solution to The Diffusion Equation

Cameron Olsen

1358873

Scientific Computing for Mechanical Engineers

Dr. Prosperetti and Dr. Amritkar

MECE 5397

Spring 2019

University of Houston

Cullen College of Engineering

Abstract

Mathematical Statement of Problem

**Solve:**

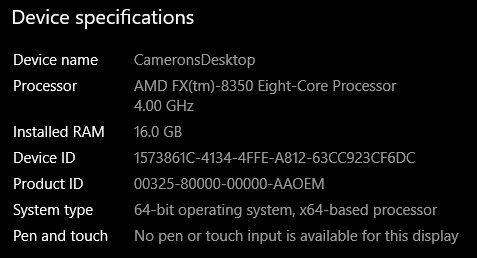
**Over:**

**Given:**

Discretized Version of the Equations

Description of the Numerical Method

Technical Specifications of the Computer Used



Results

– Specifications of parameters used in simulations

– Evaluate the effect of number of points used for discretization

– Perform grid convergence study

– Evaluate the effect of diffusive CFL\*

– Comparison of results with expected theoretical behavior

– Verify the order of spatial accuracy of discretization