Team Control Number

12833

Problem Chosen

B

2022
HiMCM/MidMCM
Summary Sheet

CO_2 and Global Warming

Abstract

Keywords: Keywords, More Keywords

Contents

1 Introduction

1.1 Background

The most significant greenhouse gas on Earth is carbon dioxide, which both absorbs and radiates heat. In contrast to oxygen and nitrogen, which together make up the majority of our atmosphere, greenhouse gases absorb heat emitted from the Earth's surface and re-emit it in all directions, including back toward the planet's surface. The natural greenhouse effect that keeps the Earth's atmosphere above freezing would be insufficient without carbon dioxide. People are accelerating the natural greenhouse effect and raising the earth's temperature by releasing more carbon dioxide into the atmosphere. The NOAA Global Monitoring Lab found that in 2021, carbon dioxide accounted for nearly two thirds of the total heating influence of all greenhouse gases created by humans.

Prior to the Industrial Revolution, carbon dioxide in the atmosphere was consistently around 280 parts per million (ppm). The concentration of CO_2 in the atmosphere reached 377.7 ppm in March 2004, resulting in the largest 10-year average increase up to that time. According to scientists from National Oceanographic and Atmospheric Administration (NOAA) and Scripps Institution of Oceanography (SIO) the monthly mean CO_2 concentration level peaked at 421 ppm in May 2022. An Organisation for Economic Co-Operations and Development (OECD) report predicts a CO_2 level of 685 ppm by 2050.

1.2 Problem Analysis

Expansion on Problem

Problem one: Specifics

Problem two: Specifics

1.3 Keyword Definitions

Term 1: Definition

Term 2: Definition

Term 3: Definition

1.4 Assumptions and Justifications

Assumption 1: Statement **Justification**: blah blah

Assumption 2: Statement **Justification**: blah blah

Assumption 3: Statement **Justification**: blah blah

2 Modeling

Introduction of model, similar to abstract

2.1 Variables and Parameters

See table 2.1:

Variable	Definition
x	description
y	description
z	description

Table 2.1: Variables in the Model

2.2 Model 1

blah blah

2.3 Model 2

blah blah

3 Results

(Full data in References.)

blah blah

4 Model Analysis

4.1 Parameter Sensitivity

blah blah

4.2 General Evaluation

Strength 1: asdf

Strength 2: asdf

Weakness 1: asdf

4.3 Possible Improvements

blah blah

5 References

5.1 Program Code

Result data generated:

```
text data stuff
```

Python program code:

```
    # pass
```

5.2 Bibliography