

Example 1

Global warming is arguably one of the most pressing concerns of our time. However, we lack an effective model to predict precisely by how much the temperature will rise as a consequence of the increased levels of CO₂ and other factors. The width of this range is due to several uncertainties in different elements of the climate models, including the variability in the Sun's rate of energy output. To gain greater insight into the relationship between solar energy output and global temperature, we propose to launch the internationally led ABC satellite in April 2018. Our aim is to collect for 2 years data on the solar diameter and shape, oscillations, and photospheric temperature variation. We will assess these data to model solar variability. Our findings will dramatically advance our understanding of solar activity and its climate effects.

Background

Problem

Objectives

Strategy

Significance

Example 2

X is a major human pathogen, which infects over 100 million people per year, leading to high morbidity and mortality. Current therapies for X are expensive, poorly tolerated, and only partially effective in controlling the pathogens and in limiting disease. Recently, we and other succeeded in establishing a system to grow X in cell culture. These systems will allow us to completely dissect the life cycle of X. Our initial characterization of cell culture-produced X indicates unusual physical properties. Understanding of X's life cycle will aid in the development of improved pharmaceuticals.

Problem statement is missing



Objective is missing

