

The problem of climate change, and especially global warming, is a serious topic in the modern world. There are a lot of evidence that climate is getting warmer such as melting of arctic ice or late beginning of winters. At the same time weather is changing, and it is possible to observe weather phenomenon which are unusual for particular places. It is used to think that human activities such as pollution from factories and cars or disafforestation can harm the nature and cause the global warming. However, the climate has been changing throughout the whole history of the planet. For example, during the Middle Ages (900–1350 AD), the climate of areas of the Northern Hemisphere was warmer with a mean temperature 1–2 °C higher than the average temperature during the 20<sup>th</sup> century. This relatively warm weather allowed northern dwellers to organize prosperous settlements in Greenland. Also, during the Last Ice Age the area where Norway is located nowadays was covered by ice of approximately 1 km thick.

The climate is a quite complex thing, and there are a lot of mechanisms that influence on it. Changes in solar radiation and volcanic activity, internal feedbacks and the ocean heat uptake are clue things for understanding physical processes of climate. It is important to realize the main external forcing mechanisms underlying in climate changes to make a prediction about future of the planet. This knowledge will also allow avoiding wrong interpretation of current climate processes.

In current work there will be an overview about the basis for understanding the physical processes governing climate variations in the past, present and future. Also, the ways how scientists discovered that the climate had been changing in the global meaning will be described briefly. The main goal of this work is to explain briefly main mechanisms which can facilitate to changing the global energy budget and cause climate variations.