The observed and projected temperature changes in the Alpine region and their consequences

Abstract

This paper studies findings from researches that describe development of a climate change in the Alps. This text shows geography of the Alps, models that define future temperature changes and natural and human factors which affect climate change in the Alpine region. One of the main topics in this paper are possible consequences of the climate change. This paper studies climate change in the Swiss Alps and in Wallis Alps on Swiss-Italian border.

The next section of this paper studies scenarios of climate change and divides them according to emission development. Paper also shows the projected temperature changes in the Alps. The main goal of this work is to accurately describe climate change models used in the Alpine region, to discuss their reliability and to determine in which cases the model temperatures differ from temperature data measured at meteorological stations. Another goal of this work is to determine physical and human factors that contribute to surface temperature warming in the Alps. This paper also shows predictions of temperature development in the Alps and its possible consequences.

In the Alps, The projected temperatures are compared with measured temperatures. Predicted temperatures are then analyzed and the prediction precision of global climate models is tested. Furthermore, temperature predictions of emission scenarios in Switzerland are divided into 3 categories according to emission changes in those scenarios. Emission scenarios are one of the climate change measurement tools to predict future temperature changes. The conclusion of this paper contains discussion about climate change knowledge and the effect that temperature changes can have on environment and socioeconomics, provided the temperatures in the Alps are rising.