

# Abstract

The aim of this thesis is to check the ice flow model by Norbert Span (1999), whose main statement is, that the behavior of velocity and mass-balance change is similar for most alpine glaciers in central Europe [18]. For this experiment the data set of Ödenwinkel Kees, a headwall glacier in the Stubach Valley, Salzburg, Austria has been taken as input to run the model. Most of this data originates from long lasting measurements by Heinz Slupetzky and his collaborators. Some other input arguments result from computations of the Austrian Glacier Inventory (AGI) in ArcGIS. Due to the fact that the mass balance of Ödenwinkel Kees has not been measured and the reconstruction which is made by Heinz Slupetzky and Gerhard Ehgartner is still under construction, there had to be found an alternative mass balance data to be able to run the model. The source for this data was provided by the mass balance data sets of Kesselwand Ferner, Hintereis Ferner and Stubacher Sonnblick Kees. These data sets have been prepared and tested in different ways to find the one which fits best to Ödenwinkel Kees to compute the final results. After all with the entire input data, it was possible to run the model.

As expected using a transferred mass balance the model output differed clearly from the reference which was provided by the AGI, but although the quantitative results were not really meaningful, the qualitative development of the mass balance and velocity change shows a significant common trend with some measured parameters which speaks in favor for them.