

# Abstract

A third-order linear glacier length model based on geometric inputs, was used to analyze if the retreat of Hintereisferner in the Austrian Alps within the last 160 years is exceptional or lies within the range of natural variability. Furthermore, an ensemble of similar parametrizations was generated in order to study the effect of varying input variables on glacier excursion statistics, revealing a strong non-linear dependency. This leads to a wide spread of excursion statistics, but the observed retreat of Hintereisferner is shown to be exceptional nevertheless. It can not be explained by natural variability inherent to a stationary climate and therefore affirms regional climate change.