

# Introduction

## Background

In this report, we will explore the various factors that influence fluid dynamics in glaciers and how they contribute to the formation and behavior of these natural structures.

1. The climate
  - Temperature
  - Precipitation
2. The topography
3. The geology

Glaciers as the one shown in Figure 1 will cease to exist if we don't take action soon!



Figure 1: *Glaciers* form an important part of the earth's climate system.

## Methods

We follow the glacier melting models established in [1].

The equation  $Q = \rho Av + C$  defines the glacial flow rate.

The displaced soil by glacial flow is given by Equation 1.

$$7.32\beta + \sum_{i=0}^{\nabla} \frac{Q_i(a_i - \varepsilon)}{2} \quad (1)$$

$$v := \begin{pmatrix} x_1 \\ x_2 \\ x_3 \end{pmatrix} \quad (2)$$

$$a \rightsquigarrow b \quad (3)$$

## Bibliography

- [1] R. Hock, "Glacier melt: a review of processes and their modelling," *Progress in Physical Geography: Earth and Environment*, vol. 29, no. 3, pp. 362–391, 2005, doi: 10.1191/0309133305pp453ra.