1. Define boxes based on relative distance from GL and ice front (sect. 2.3 - Reese et al., 2018)
2. Calculate sub-shelf ocean temperature and salinity fields from box1 to box_n (Appendix A - Reese et al., 2018) \((T_a, S_a)\)

### Plume model

1. Characteristic freezing point and heat exchange coefficient (eq. 4 and 5) \(T_{f,gl}\) and \(\Gamma_{TS}\)
2. Geometric factor and length scale (eq. 6 and 7) \(g(\alpha)\) and \(l\)
3. Dimensionless coordinate (eq. 8) \(\hat{X}\)
4. Melt rate scale, dimensionless melt curve, and melt rate (eqn. 9 and 10) \(M, \hat{M}(\hat{X})\) and \(\hat{m}\)

### Grounding line height

Solve the advection equation to obtain \(z_{gl}\)

\[
\begin{align*}
\nabla \cdot (z_{gl}) + \epsilon \Delta z_{gl} &= 0 \quad \text{in } \Omega \\
z_{gl} &= z_{gl0} \quad \text{on } \Gamma
\end{align*}
\]