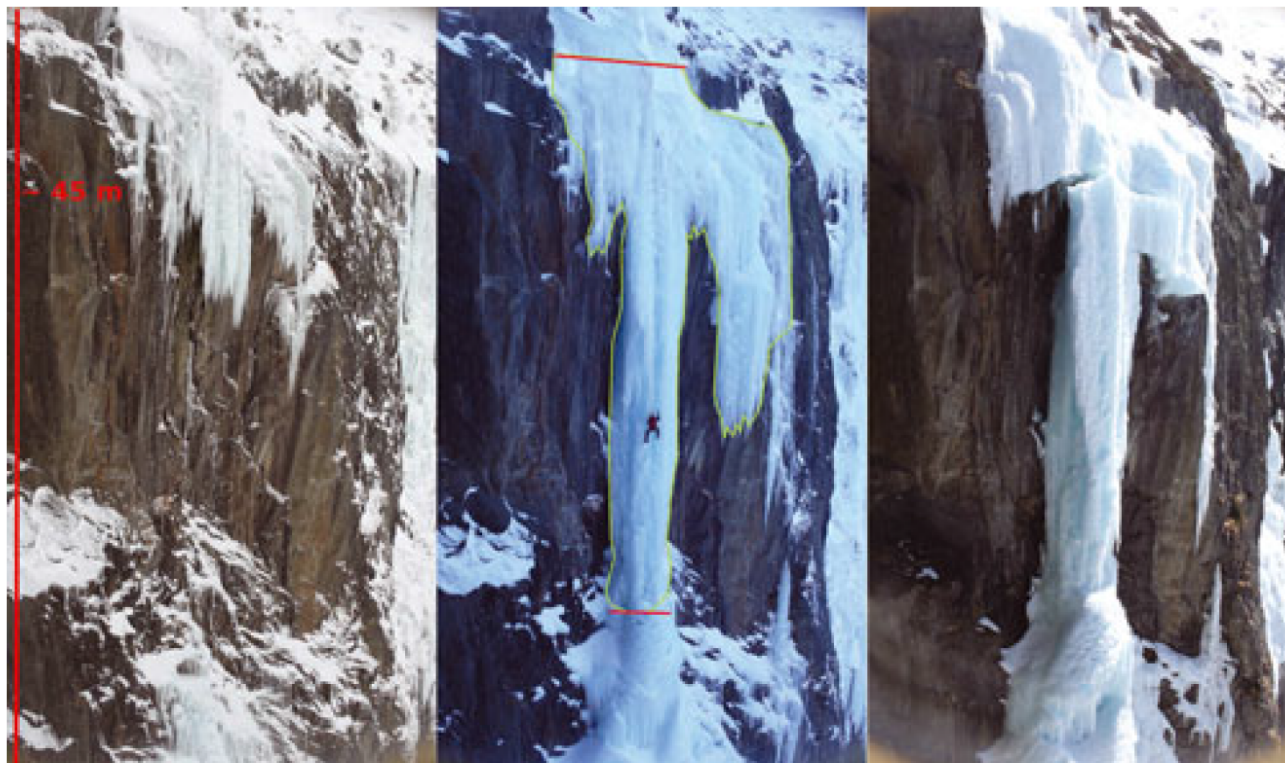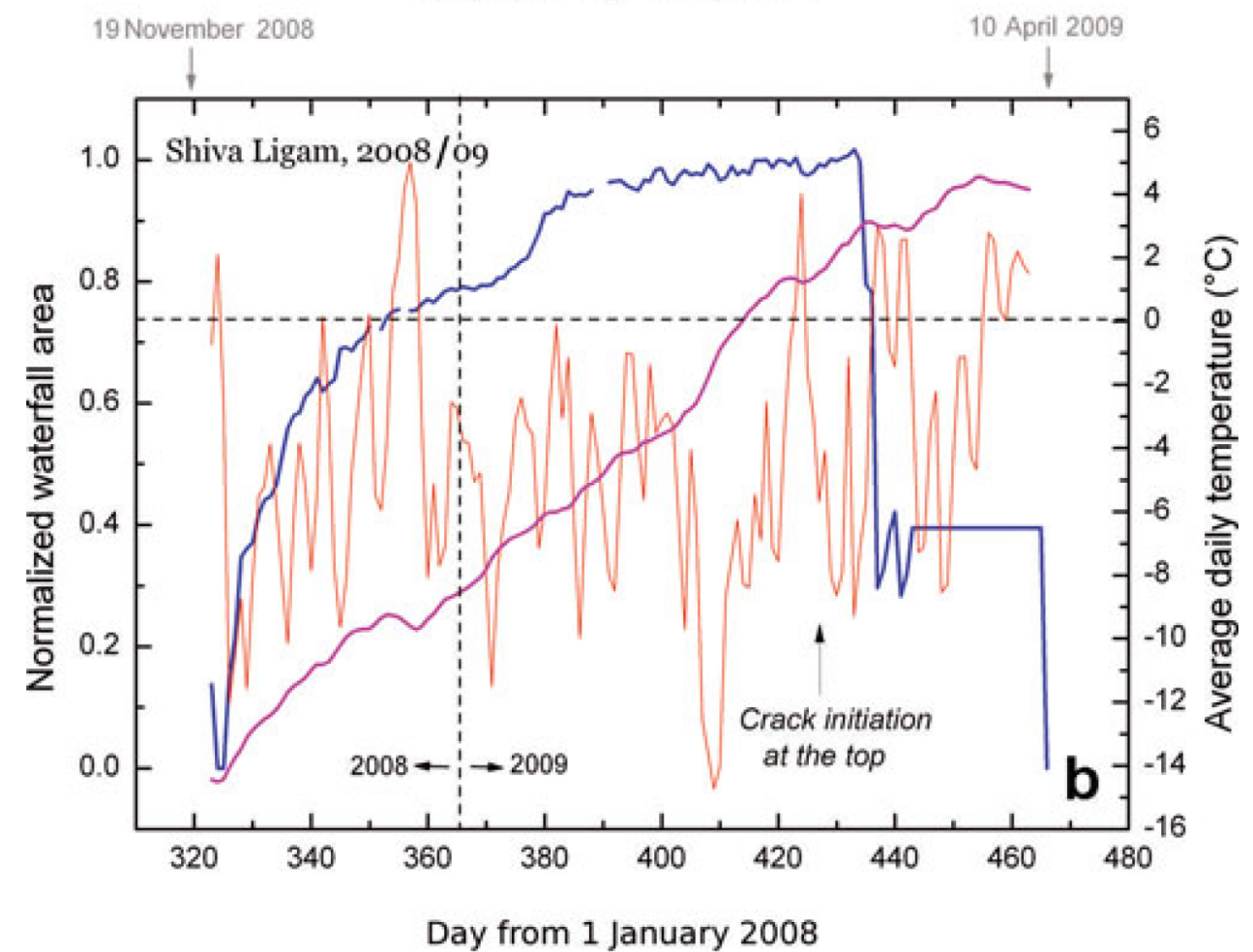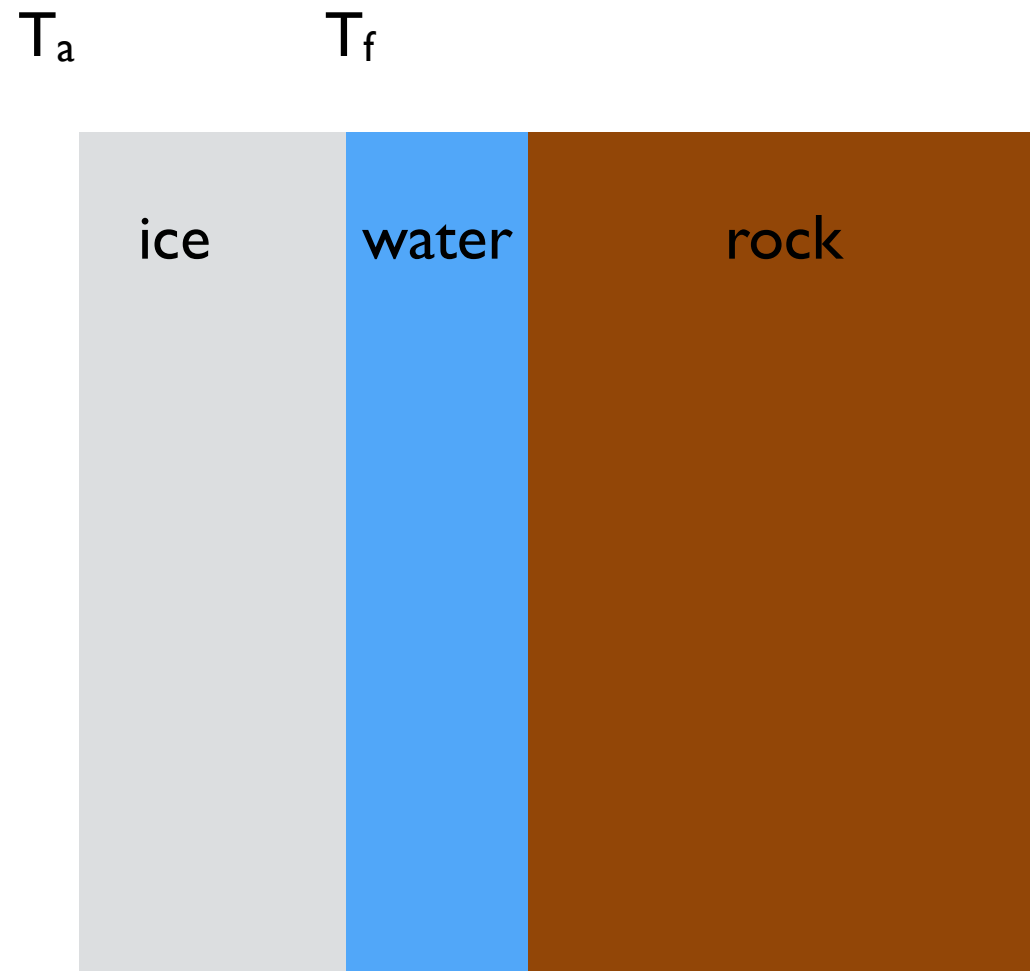# The ice cascade problem I

Shiva Lingam in the Mont-Blanc range

The ice cascade problem I

T_a T_f

A very crude model :
- waterfall completely covered by ice
- assume negligible sensible heat transfer from water to ice
- outside ice surface is at ambient air temperature,
- no radiative transfer

Compute ice thickness evolution with time
thermal conductivity of ice $\lambda \sim 2\,W\,m^{-1}\,K^{-1}$
specific latent heat of melting L = 300 kJ/kg

assume that $\displaystyle\int_{t_0}^{t}(T_f - T_a)dt$ increases linearly with time