Paper Title Here

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Abstract: Write the abstract of the paper in this allotted space. Do not add modify the formatting. The abstract should be a maximum of 200 words.

Introduction

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Formatting Equations, Figures, and Tables

Use the following format for your equations, figures, and tables. Equations, figures, and tables should be numbered and appropriately referred to in the text.

Gibbs-Thomson Relation

The Gibbs-Thomson equation determines the critical pore radius below which the water is at a liquid state and can be described as follows:

$$T_m - T_0 = \frac{T_0 \gamma_{sl}}{\rho_i \, L_f \, R} \tag{1}$$

where T_m is the melting point of water in the pores, T_0 is the melting point of pure liquid water, γ_{sl} is the free energy coefficient of the ice–water interface, ρ_i is the ice-phase density, L_f is the latent heat of phase transformation, and R is the pore radius [1]. The variation of freezing temperature with pore radius, as predicted by Eq. 1 is shown in Fig. 1. The relation has been used for deriving the freezing characteristics curve, see for instance [2].

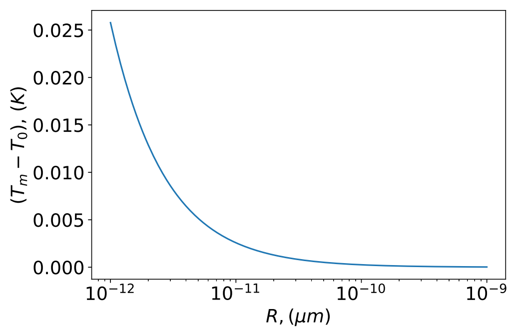

Figure 1: Gibbs-Thomson relation for freezing temperature of water in pores with varying radii.

Table 1: Parameters for water and ice for Gibbs-Thomson equation (1).

$T_0\,(K)$	$\gamma_{sl}\,(J\,m^{-2})$	$\rho_i\,(kg\,m^{-3})$	$L_f\,(J\,kg^{-1})$
273.15	0.029	917	3.35×10^5

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References

[1] É Devoie, S Gruber, and J McKenzie. A repository of measured soil freezing characteristic curves: 1921 to 2021. *Earth System Science Data*, 14(7):3365–3377, 2022.

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